FVB.129(Cg)-*Slc9a3* ^{tm1Ges} /J

Stock No: **012563**

Congenic, Targeted Mutation

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

PLACE ORDER

maintaining luminal fluid homeostasis, fluid reabsorption in other organ systems (including kidney and efferent ductules of the male reproductive tract), and neuronal control of respiration.

Donating Investigator

Gary E Shull, University of Cincinnati

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GENETIC OVERVIEW

Genetic Background	Generation

Slc9a3^{tm1Ges}

Allele Type	Gene Symbol	Gene Name
Targeted (Null/Knockout)	*Slc9a3*	solute carrier family 9 (sodium/hydrogen exchanger), member 3

VIEW GENETICS

RESEARCH APPLICATIONS

Developmental Biology Research
Research Tools
Neurobiology Research
Reproductive Biology Research
Internal/Organ Research
Metabolism Research
Cell Biology Research
Cardiovascular Research

VIEW ALL RESEARCH APPLICATION

BASE PRICE

Starting at:

$2,854.50 Domestic price Cryo Recovery

VIEW PRICE LIST

Details

Detailed Description

These mice harbor a targeted mutation of the Na^+/H^+ exchanger isoform 3 locus (Nhe3 or *Slc9a3*) that abolishes endogenous gene expression. While no full-length mRNA is detected in kidney or intestine of homozygous mice, a truncated mutant mRNA lacking codons 320-831 (encoding sequences required for Na^+/H^+ exchange) is observed but expected to impart no dominant negative effects. When maintained as congenic on the FVB/N genetic background, homozygous mice exhibit a high mortality rate beginning just after weaning, with ~30% surviving to adulthood. Homozygous females are fertile, but homozygous males are infertile.

Homozygous (Nhe3-null) mice lack Na^+/H^+ exchanger isoform 3 function, and exhibit impaired intestinal absorption; resulting in severe diarrhea, altered salt and water homeostasis, and increased luminal fluid throughout the intestinal tract. Nhe3-null mice have increased PCNA-positive cells in the crypts (indicative of cell proliferation), as well as downregulation of genes involved in xenobiotic metabolism and glutathione metabolism in the intestine (resulting in increased intracellular glutathione levels),
Nhe3-null mice exhibit blunted renal reabsorption in the proximal and distal tubules; but compensatory alterations in filtration rate and/or downstream transport processes ameliorate any severe kidney phenotype. Homozygous null animals have increased levels of kidney renin mRNA and circulating aldosterone, suggesting that they are somewhat volume depleted. Homozygous animals are also acidotic.
Nhe3-null mice have abnormalities of Na^+/H^+ exchange and water transport in the epididymis: the efferent ductules/rete testes dilate and the increased fluid volume results in diminished sperm concentration and inability of sperm to fertilize.
Nhe3-null mice also exhibit reduced blood pressure.

In addition, Nhe3-deficiency increases survival and decreases the incidence of intestinal obstructions in cystic fibrosis mice (see Stock No. 002196).

Development

Control Suggestions

Selected References

Genetics

Slc9a3^{tm1Ges}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Standard PCR:Slc9a3
Genotyping resources and troubleshooting

Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred together, to wildtype siblings, or to FVB/NJ inbred mice (Stock No. 001800). When maintained as congenic on the FVB/N genetic background, homozygous mice exhibit a high mortality rate beginning just after weaning, with ~30% surviving to adulthood. Homozygous females are fertile, but homozygous males are infertile.

Additional Breeding and Husbandry Support

Citation

When using the FVB.129(Cg)-*Slc9a3*^{tm1Ges}/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #012563 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 | **Internatic**

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous or wildtype for Slc9a3<tm1Ges>	$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	FVB.129(Cg)-Slc9a3<tm1Ges>/J Frozen Embryo	$2595.00

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.

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Phone: 207-288-6470
Email: TechTran@jax.org

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