



B 6 . C ^{tm1.1(APOE*4)A}pp o e ^{en1A} S o r l 1 ^{en1A} T r e m 2 ^{en1A} / J

Stock No: 031940 | Sorl1*A528T/APOE4/Trem2*R47H

◆ Congenic, Targeted Mutation, Endonuclease-Mediated Mutation



CRYORECOVERY

P L A C E O R D E R

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

Overview



MODEL-AD

Model Organism Development & Evaluation for Late-Onset Alzheimer's Disease

Also Known As: *Sor1**A528T/APOE4/*Trem2**R47H

This triple mutant strain carries a humanized ApoE knock-in mutation (sequence coding for isoform E4), a CRISPR/cas9-generated A528T point mutation of the *Sor1* (sortilin-related receptor, LDLR class A repeats-containing) gene and a CRISPR/cas9-generated R47H point mutation of the *Trem2* gene. These mice may be suitable for use in studies related to Alzheimer's disease, lipoproteins, arteriosclerosis, and coronary heart disease.

Donating Investigator

Mike Sasner, The Jackson Laboratory

READ MORE +

GENETIC OVERVIEW

Genetic Background

Generation

Trem2^{em1Adiuj}

| Allele Type | Gene Symbol | Gene Name |
|--|--------------|--|
| Endonuclease-mediated (Humanized sequence) | <i>Trem2</i> | triggering receptor expressed on myeloid cells 2 |

Sor1^{em1Adiuj}

| Allele Type | Gene Symbol | Gene Name |
|---------------------------------------|-------------|--|
| Endonuclease-mediated (Not Specified) | <i>Sor1</i> | sortilin-related receptor, LDLR class A repeats-containing |

Apoe^{tm1.1(APOE*4)Adiuj}

| Allele Type | Gene Symbol | Gene Name |
|--|-------------|------------------|
| Targeted (Inserted expressed sequence, Humanized sequence) | <i>ApoE</i> | apolipoprotein E |

V I E W G E N E T I C S

RESEARCH APPLICATIONS

Neurobiology Research
Research Tools
Cardiovascular Research
Metabolism Research

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

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

This triple mutant strain carries a humanized ApoE knock-in allele, in which exons 2, 3 and most of exon 4 of the mouse *ApoE* gene were replaced by human *APOE4* gene sequence including exons 2, 3 and 4 (and some 3' UTR sequence); CRISPR/cas9-generated A528T point mutation and silent R529R mutation in exon 11 of the *Sor1* (sortilin-related receptor, LDLR class A repeats-containing) gene; and a knock-in of a point mutation into mouse *Trem2*, triggering receptor expressed on myeloid cells 2, gene containing a R47H point mutation, with two silent mutations.

The targeted *ApoE* gene encodes apolipoprotein E, which is important in lipoprotein metabolism and cardiovascular disease as well as Alzheimer's disease, immunoregulation and cognition.

The targeted *Sor11* gene encodes a mosaic protein and neuronal sorting receptor that is involved in endocytosis. Mutations of this gene have been associated with Alzheimer's disease.

The targeted *Trem2* gene encodes a protein that is part of a receptor signaling complex with TYRO protein tyrosine kinase binding protein, and that activates macrophages and dendritic cells during immune responses. Loss-of-function variants of the TREM2 gene are associated with Alzheimer's Disease. The R47H point mutation has been shown to increase Alzheimer's disease risk.

Mice that are homozygous for the *Apoe*^{tm1.1(APOE*4)Adiuj} and *Trem2*^{em1Adiuj} alleles, and heterozygous for the *Sor11*^{em1Adiuj} allele are viable and fertile. Homozygous viability/fertility has not been tested for the *Sor11*^{em1Adiuj} allele (March 2018).

As the mice are characterized, we will modify the strain description and add phenotype data.

+ Development

+ Expression Data

+ Control Suggestions

- Genetics

+ *Trem2*^{em1Adiuj}

+ *Sor11*^{em1Adiuj}

+ *Apoe*^{tm1.1(APOE*4)Adiuj}

- Disease/Phenotype

+ Disease Terms

+ Research Areas By Genotype

+ Mammalian Phenotype Terms by Genotype

+ References

- Technical Support

C H A T O  F L I N E

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

End Point Analysis: [Trem2^{em1Adiuj}-EP](#)

Standard PCR: [Apoe^{tm1.1\(APOE*4\)Adiuj}](#)

End Point Analysis: [Sor11^{em1Adiuj}](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, mice homozygous for the *Apoe*^{tm1.1(APOE*4)Adiuj} and *Trem2*^{em1Adiuj} alleles, and heterozygous for the *Sor11*^{em1Adiuj} allele may be bred.

Homozygous viability/fertility has not been tested for the *Sor11*^{em1Adiuj} allele (March 2018).

As the mice are characterized, we will modify the strain description if necessary and add data related to viability and fertility.

[Additional Breeding and Husbandry Support](#)

Mating System

Homozygous *Apoe*, homozygous *Trem2* x Homozygous *Apoe*, homozygous *Trem2*

Citation

When using the *Sor11*^{A528T/APOE4/Trem2}*R47H mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #031940 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 | GENOTYPE | PRICE |
|---------------|--|------------|
| Cryo Recovery | Homozygous for <i>Apoe</i> <tm1.1(APOE*4)Adiuj> and <i>Trem2</i> <em1Adiuj> Heterozygous or wildtype for <i>Sor11</i> <em1Adiuj> | \$2,854.50 |

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryorecovery to establish a [Dedicated Supply](#) for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

| | | |
|---------------------|--|-----------|
| Frozen Mouse Embryo | B6.Cg-Apoe<tm1.1(APOE*4)Adiuj> Sor11<em1Adiuj> Trem2<em1Adiuj> | \$2595.00 |
|---------------------|--|-----------|

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