



B 6 . Ck*gf*-f 2 1*b*^{en1A*diuj*} A p o e ^{en1A*diuj*} Trem 2 | J

Stock No: 031938 | Kif21b*T82T/APOE4/Trem2*R47H

◆ Congenic, Targeted Mutation, Endonuclease-Mediated Mutation



CRYORECOVERY

PLACE ORDER

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: *Kif21b**T82T/APOE4/*Trem2**R47H

This triple mutant strain carries a CRISPR/Cas9-generated T82T point mutation of the *Kif21b* gene, a humanized ApoE knock-in mutation (sequence coding for isoform E4) 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

Kif21b^{em1Adiuj}

Allele Type	Gene Symbol	Gene Name
Endonuclease-mediated (Not Specified)	<i>Kif21b</i>	kinesin family member 21B

*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 CRISPR/cas9-generated T82T point mutation (ACG to ACA) of the *Kif21b* gene; 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); 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 *Kif21b* gene encodes a kinesin motor protein expressed in the brain, spleen and testis, and that is involved in cytoskeletal transport and neuron development. Dysregulation of this gene has been associated with accelerated neurodegeneration in multiple sclerosis and 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. The *TREM2* R47H mutation is a missense mutation in exon 2 that is one of the strongest genetic risk factors for late-onset Alzheimer's disease. Mice that are homozygous for the *Apoe*^{tm1.1(APOE*4)Adiuj} and *Trem2*^{em1Adiuj} alleles, and heterozygous for the *Kif21b*^{em1Adiuj} allele are viable and fertile. Homozygous viability/fertility has not been tested for the *Kif21b*^{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}

+ *Kif21b*^{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: [Kif21b^{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 *Kif21b*^{em1Adiuj} allele may be bred.

Homozygous viability/fertility has not been tested for the *Kif21b*^{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 *Kif21b*^{*T82T/APOE4/Trem2}*R47H mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #031938 in your Materials and Methods section.

[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	Heterozygous or wildtype for <i>Kif21b</i> <em1Adiuj>; Homozygous for <i>Apoe</i> <tm1.1(APOE*4)Adiuj>; Homozygous for <i>Trem2</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-Kif21b<em1Adiuj> Apoe<tm1.1(APOE*4)Adiuj> Trem2<em1Adi	\$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.

➔ Terms Of Use

Terms of Use

[General Terms and Conditions](#)

Q U E S T I O N S A B O U T T E R M S O F U S E

Additional Use Restrictions Apply

[The use of this mouse model is subject to the terms and conditions of the Limited License from The Broad Institute.](#)

[The use of this mouse model is subject to the terms and conditions of the Limited Use Label License from Caribou Biosciences, Inc.](#)

Licensing Information

Phone: 207-288-6470

Email: TechTran@jax.org

JAX® Mice, Products & Services Conditions of Use

"MICE" means mouse strains, their progeny derived by inbreeding or crossbreeding, unmodified derivatives from mouse strains or their progeny supplied by The Jackson Laboratory ("JACKSON"). "PRODUCT(S)" means biological materials supplied by JACKSON, and their derivatives. "SERVICES" means projects conducted by JACKSON for other parties that may include but are not limited to the use of MICE or PRODUCTS. "RECIPIENT" means each recipient of MICE, PRODUCTS, or SERVICES provided by JACKSON including each institution, its employees and other researchers under its control. MICE or PRODUCTS shall not be: (i) used for any purpose other than internal research, (ii) sold or otherwise provided to any third party for any use, or (iii) provided to any agent or other third party to provide breeding or other services. Acceptance of MICE, PRODUCTS or SERVICES from JACKSON shall be deemed as agreement by RECIPIENT to these conditions, and departure from these conditions requires JACKSON's prior written authorization.

No Warranty

MICE, PRODUCTS AND SERVICES ARE PROVIDED "AS IS". JACKSON EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS, IMPLIED, OR STATUTORY, WITH RESPECT TO MICE, PRODUCTS OR SERVICES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF NON-INFRINGEMENT OF ANY PATENT, TRADEMARK, OR OTHER INTELLECTUAL PROPERTY RIGHTS.

Credit for PRODUCTS or SERVICES

In case of dissatisfaction for a valid reason and claimed in writing by a purchaser within ninety (90) days of receipt of, PRODUCTS or SERVICES, JACKSON will, at its option, provide credit or replacement for the PRODUCT received or the SERVICES provided; JACKSON makes no other representations and this shall be the exclusive remedy of the purchaser. [Please note specific policy for live mice.](#)

Animal Care and Use for SERVICES

Consistent with the requirement for a written understanding regarding animal care and use, the JACKSON Animal Care and Use Committee will review the animal care and use protocol(s) associated with any SERVICES to be performed at JACKSON, and JACKSON shall have ultimate responsibility and authority for the care of animals while on site or in JACKSON custody.

No Liability

In no event shall JACKSON, its trustees, directors, officers, employees, and affiliates be liable for any causes of action or damages, including any direct, indirect, special, or consequential damages, arising out of the provision of MICE, PRODUCTS, or SERVICES, including economic damage or injury to property and lost profits, and including any damage arising from acts or negligence on the part of JACKSON, its agents or employees. Unless prohibited by law, in purchasing or receiving MICE, PRODUCTS, or SERVICES

from JACKSON, purchaser or recipient, or any party claiming by or through them, expressly releases and discharges JACKSON from all such causes of action or damages, and further agrees to defend and indemnify JACKSON from any costs or damages arising out of any third party claims.

MICE, PRODUCTS or SERVICES are to be used in a safe manner and in accordance with all applicable governmental rules and regulations.

The foregoing represents the General Terms and Conditions applicable to JACKSON's MICE, PRODUCTS or SERVICES. In addition, special terms and conditions of sale of certain MICE, PRODUCTS, or SERVICES may be set forth separately in JACKSON web pages, catalogs, price lists, contracts, and/or other documents, and these special terms and conditions shall also govern the sale of these MICE, PRODUCTS and SERVICES by JACKSON, and by its licensees and distributors.

Acceptance of delivery of MICE, PRODUCTS or SERVICES shall be deemed agreement to these terms and conditions. No purchase order or other document transmitted by purchaser or recipient that may modify the terms and conditions hereof, shall be in any way binding on JACKSON, and instead the terms and conditions set forth herein, including any special terms and conditions set forth separately, shall govern the sale of MICE, PRODUCTS or SERVICES by JACKSON.

☰ Related Strains

All

By Allele

By Gene

By Collection

All Related Strains



DO YOU NEED BALB/c MICE?

Rely on JAX to provide the models you need, when you need them.

LEARN MORE



CONTACT



DONATE



SUBSCRIBE

[JAX HOME](#) [CAREERS](#) [PRIVACY POLICY](#) [TERMS OF USE](#)

[RESEARCH CENTERS](#) [MOUSE GENOME INFORMATICS](#)

[MOUSE PHENOME DATABASE](#)

Leading the search for

TOMORROW'S CURES

©2020 THE JACKSON LABORATORY

Choose other country or region 