

B6.Cg-Tg(FCGRT)32Dcr Tg(K18-ACE2)2PrImn

Fcgrt^{tm1Dcr}/J

Stock No: **034902** | K18-hACE2 ; FcRn^{-/-} hFcRn (32) Tg

📍 Congenic, Targeted Mutation, Transgenic

Live mice available in varying quantities. Ask Customer Service for details.

PLACE ORDER

Email Download PDF Help

gain cellular entry. The human K18 promoter directs expression to epithelia, including airway epithelia where infections typically begin. Because K18-hACE2 mice are susceptible to SARS-CoV-2 and SARS-CoV viruses, they are useful for studying antiviral therapies to COVID-19 and SARS.

This strain also has the FcRn^{-/-} targeted mutation and hFcRn (32) transgene, which may enhance the human-like protection of humanized IgG and potentially make these mice useful for developing antibody-based therapeutics against SARS-CoV, including assessing half-life, selecting efficacious variants and determining dosage for clinical trials.

JAX is dedicated to supporting the scientific community in its response to the COVID-19 pandemic. [View our portfolio of available models for SARS-CoV-2 research.](#)

READ MORE +

GENETIC OVERVIEW

Genetic Background

Generation

N1
(2020-12-07 00:00:00)

Fcgrt^{tm1Dcr}

Alele Type

Targeted (Null/Knockout)

Gene Symbol

Fcgrt

Gene Name

Fc receptor, IgG, alpha chain transporter

Tg(FCGRT)32Dcr

Alele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

Tg(K18-ACE2)2PrImn

Alele Type

Transgenic (Inserted expressed sequence)

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

RESEARCH APPLICATIONS

Immunology, Inflammation and Autoimmunity Research
Research Tools
Virology Research
Developmental Biology Research
Internal/Organ 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:

\$425.00 Domestic price for female 4-week

V I E W P R I C E L I S T

Details

Detailed Description

Please see the *K18-hACE2 datasheet* (Stock No. [034860](#)) for important safety/handling and any updated information on *K18-hACE2 mice in SARS-CoV-2 research*.

Please note, these mice should be handled in a manner consistent with [CDC/ABSA/WHO](#) guidelines for prevention of human infection with the SARS-CoV-2 virus. Proper PPE and handling methods should be used at all times when working with these mice. [Additional important guidelines for using SARS-CoV-2 susceptible mouse lines](#).

Stock No. 034902 K18-hACE2 ; FcRn^{-/-} hFcRn (32) Tg is a multiple mutant strain assembled by breeding Stock Nos. [034860](#) and [014565](#). In an attempt to offer popular alleles together, mouse lines may be bred together for purpose of researchers to study and characterize. It should be noted that the phenotype of Stock No. 034902 could vary from that originally described for the individual mouse lines used to assemble it. We may modify the strain description if necessary as published results become available. Each mutant allele is briefly described below [September 2020].

*K18-hACE2 transgenic mice express the receptor for severe acute respiratory syndrome (SARS), caused by a coronavirus (SARS-CoV) in airway and other epithelia under control of the human keratin 18 (*KRT18*) promoter. Specifically, these mice contain 2.5 kb of the *KRT18* genomic sequence, including the promoter, and the first intron (with a mutation in the 3' splice acceptor site to reduce exon skipping) and a translational enhancer (TE) sequence from alfalfa mosaic virus, upstream of the human angiotensin I converting enzyme (peptidyl-dipeptidase A) 2 coding sequence (*hACE2*), followed by exons 6-7 and the poly(A) signal of the human *K18* gene. These elements have been found to be necessary for high-level expression and epithelial cell specificity of *hACE2*, the primary host cell receptor for SARS-CoV. In these mice, from founder line 2, *K18-**

hACE2 transgene expression is evident in airway epithelial cells (but not in alveolar epithelia), as well as in epithelia of other internal organs, including the liver, kidney, and gastrointestinal tract. Recent research indicates that this line may also be useful in studies related to the study of 2019 novel coronavirus (SARS-CoV-2) pathogenesis.

Addition of the *FcRn*^{-/-} targeted mutation and *hFcRn* (32) transgene may enhance the human-like protection of humanized IgG potentially making these mice a good model for developing antibody-based therapeutics against SARS-CoV, including assessing half-life, selecting efficacious variants, and determining dosage for clinical trials. Using this model, clinicians may be able to estimate the minimum antibody dose to achieve therapeutic serum concentrations, reducing the need for potentially risky dose-escalation treatments during clinical trials.

The *K18-ACE2* transgene, *FcRn*^{-/-} targeted mutation and *hFcRn* (32) transgene are able to be maintained as homozygous in their individual mouse lines. However, because the two transgenes are located ~1.9 Mbp apart on chromosome 2, it may be difficult to generate Stock No. 034902 mice with the two transgenes in *cis* (on the same chromosome). As such, The Jackson Laboratory will maintain and distribute as hemizygous for the *K18-ACE2* transgene, hemizygous for the *hFcRn* (32) transgene and homozygous for the *FcRn*^{-/-} targeted mutation.

+ Development

+ Expression Data

+ Control Suggestions

- Genetics

+ *Fcgr*^{tm1Dcr}

+ Tg(FCGRT)32Dcr

+ Tg(K18-ACE2)2PrImn

- Disease/Phenotype

+ Disease Terms

+ Research Areas By Phenotype

+ Mammalian Phenotype Terms by Genotype

+ References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Standard PCR:[Fcgrt](#)

Standard PCR:[Fcgrt Alternate1](#)

Probe:[Tg\(FCGRT\)-Chr2-Probe-alternate1](#)

Standard PCR:[Fcgrtm1Dcr Alternate1](#)

Probe:[Tg\(K18-ACE2\)2PrImn QPCR](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

Stock No. 034902 was created by breeding the Tg(K18-ACE2)2PrImn [K18-ACE2] transgenic mouse line with the *Fcgrt^{tm1Dcr}* [FcRn^{-/-}] targeted mutation and Tg(FCGRT)32Dcr [hFcRn (32)] transgenic line. The K18-ACE2 transgenic line and the FcRn^{-/-} targeted mutation and hFcRn (32) transgenic line are able to be maintained as homozygous in their individual mouse lines. However, because the two transgenes are located ~1.9 Mbp apart on chromosome 2, it may be difficult to generate Stock No. 034902 mice with the two transgenes in *cis* (on the same chromosome). As such, The Jackson Laboratory will maintain and distribute as hemizygous for the K18-ACE2 transgene, hemizygous for the hFcRn (32) transgene and homozygous for the FcRn^{-/-} targeted mutation.

The Tg(K18-ACE2)2PrImn transgene has 8 full copies (or 12-30 partial copies) integrated at a single site on chromosome 2 (99,209,508-99,220,724; mouse mm10). The Tg(FCGRT)32Dcr transgene integrated on chromosome 2 (101,081,712-101,081,713 bp).

Additional Breeding and Husbandry Support

Mating System

Hemizygous for Tg(K18-ACE2)2PrImn Hemizygous for Tg(FCGRT)32Dcr Homozygous for *Fcgrt^{tm1Dcr}* X Strain 014565 - B6.Cg-*Fcgrt^{tm1Dcr}* Tg(FCGRT)32Dcr/DcrJ and reciprocal

Appearance

Black

Citation

When using the K18-hACE2 ; FcRn^{-/-} hFcRn (32) Tg mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #034902 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX12 \(Maximum\)](#)

Pricing & Availability



Live mice available in varying quantities. Ask Customer Service for details.

Available

Domestic **International**

Pricing effective for USA, Canada and Mexico shipping destinations

Domestic Pricing for



Commercial & For-Profit



Not-For-Profit & Academic

LIVE MOUSE

AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
	Male	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
5 weeks	Female	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
	Male	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
6 weeks	Female	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
	Male	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
7 weeks	Female	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
	Male	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
8 weeks	Female	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00
	Male	Hemizygous for Tg(FCGRT) ^{tm1Dcr} 32Dcr Hemizygous for Tg(K18-ACE2)2PrImn Homozygous for Fcgrt	\$425.00

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.

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

Use of MICE by companies or for-profit entities requires a no-fee JAX Leap License prior to shipping.

LICENSING INFORMATION

Phone: 207-288-6470

Email: TechTran@jax.org

Related Strains

All

By Allele

By Gene

By Collection






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](#) [LEGAL INFORMATION](#)

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


[MOUSE PHENOME DATABASE](#)

Leading the search for

TOMORROW'S CURES



©2021 THE JACKSON LABORATORY

Choose other country or region 

[^](#) [E](#) [E](#) [E](#) [D](#) [B](#)

Did you find what you were looking for?

Yes No