

STOCK *Mttp<sup>tm2Sgy</sup>* *Ldlr<sup>tm1Her</sup>* *Apob<sup>tm2Sgy</sup>* Tg(Mx1-cre)1Cgn/J

Stock No: 004192 | Reversa mice

Targeted Mutation, Transgenic

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

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atherosclerosis.

See Updated *Apob* Allele Information below[2020].

Donating Investigator

Dr. Stephen Young, UCLA

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## GENETIC OVERVIEW

Genetic Background

Generation

*Ldlr<sup>tm1Her</sup>*

**Allele Type**

Targeted (Null/Knockout)

**Gene Symbol**

*Ldlr*

**Gene Name**

low density lipoprotein receptor

*Apob<sup>tm2Sgy</sup>*

**Allele Type**

Targeted (Null/Knockout)

**Gene Symbol**

*Apob*

**Gene Name**

apolipoprotein B

*Mttp<sup>tm2Sgy</sup>*

**Allele Type**

Targeted (Conditional ready (e.g. floxed), No functional change)

**Gene Symbol**

*Mttp*

**Gene Name**

microsomal triglyceride transfer protein

Tg(Mx1-cre)1Cgn

## Alele Type

Transgenic (Recombinase-expressing, Inducible)

[VIEW GENETICS](#)

## RESEARCH APPLICATIONS

Cardiovascular Research  
Mouse/Human Gene Homologs  
Metabolism Research  
Developmental Biology Research  
Neurobiology Research  
Research Tools

[VIEW ALL RESEARCH APPLICATIONS](#)

## BASE PRICE

Starting at:

\$2,854.50 Domestic price Cryo Recovery

[VIEW PRICE LIST](#)

### [Details](#)

#### [Detailed Description](#)

These mice are homozygous for four different induced mutations. The cumulative result of these mutations is a mouse model in which hypercholesterolemia can be reversed. By themselves, the combined presence of the *Ldlr*<sup>tm1Sgy</sup> and *Apob*<sup>tm1Sgy</sup> targeted alleles results in mice with a high susceptibility to atherosclerosis and total plasma cholesterol levels of approximately 300 mg/dl. A functional microsomal triglyceride transfer protein gene (*Mtp*) is essential for establishing a hypercholesterolemic condition. By flanking the *Mtp* gene with *loxP* sites and including a *Mx1-Cre* transgene, it is possible to reduce total plasma cholesterol levels from 300 mg/dl to 30 mg/dl upon induction of the Cre recombinase by administering interferon alpha, interferon beta, or synthetic double-stranded RNA. This unique model is useful in research related to the mechanisms and events of atherosclerotic reversal. Mice homozygous for the targeted alleles are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities.

**Updated Apob Allele Information:** In 2020, analysis by The Jackson Laboratory determined the mice to have the post-FIAU Apo-B100 (the neo, TK and duplicate exons 26-29 deleted) allele on one homologous chromosome, and pre-FIAU Apo-B100 (retaining the neo, TK and duplicate exons 26-29) on the other homologous chromosome. This analysis also confirmed that RT-PCR of compound heterozygous liver shows predicted change in coding component (CAA to CTA in

codon 2179), and reduced HDL was verified (64.2 mg/dL +/- 9.02 [n=9] compared to C57BL/6J 94.9 mg/dL +/-6.5 [n=4]).

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[+ Development](#)

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[+ Expression Data](#)

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[+ Selected References](#)

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## [- Genetics](#)

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[+ \*Ldlr\*<sup>tm1Her</sup>](#)

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[+ \*Apob\*<sup>tm2Sgy</sup>](#)

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[+ \*Mttp\*<sup>tm2Sgy</sup>](#)

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[+ Tg\(Mx1-cre\)1Cgn](#)

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## [- Disease/Phenotype](#)

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[+ Disease Terms](#)

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[+ Research Areas By Phenotype](#)

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[+ Mammalian Phenotype Terms by Genotype](#)

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[+ References](#)

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## [- 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](#)  
[Restriction Enzyme Digest:Apob](#)  
[Probe:Generic Cre Probe](#)  
[QPCR:Generic Cre Quantitative PCR](#)  
[End Point Analysis:ApobEP](#)  
[Standard PCR:Mtp](#)  
[Standard PCR:Ldlr-alternate 1](#)  
[Standard PCR:Generic Cre Melt Curve Analysis](#)  
[Genotyping resources and troubleshooting](#)

## Breeding Considerations

Several strains contribute to the genetic background of this mutant mouse. Contributions from C57BL/6, CBA, 129S7/SvEvBrd-*Hprt*<sup>b-m2</sup> and 129S4/SvJae are noted. Expected Coat color: Black and White Bellied Agouti.

## Additional Breeding and Husbandry Support

## Citation

When using the Reversa mice mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #004192 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
<a href="#">Cryo Recovery</a>	Homozygous for Mtp<tm2Sgy>, Homozygous for Ldlr<tm1Her>, Homozygous for Apob<tm2Sgy>, Homozygous for Tg(Mx1-cre)1Cgn/J	\$2,854.50

### RELATED PRODUCTS AND SERVICES

<a href="#">Frozen Mouse Embryo</a>	STOCK Mtp<tm2Sgy>Ldlr<tm1Her>Apob<tm2Sgy>Tg(Mx1-cre)1Cgn/J	\$2595.00
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## 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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[General Terms and Conditions](#)

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#### ADDITIONAL USE RESTRICTIONS APPLY

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#### LICENSING INFORMATION

Phone: 207-288-6470  
Email: [TechTran@jax.org](mailto:TechTran@jax.org)

### Related Strains

All

By Allele

By Gene

By Collection



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