



C57BL/6J - Tg(C9orf72_i3)112Lutzky/J

Stock No: 023099 | Tg(C9orf72_3) line 112

Coisogenic, Transgenic



AVAILABLE

PLACE ORDER

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

Overview

Also Known As: Tg(C9orf72_3) line 112

Tg(C9orf72_3) line 112 mice have several tandem copies of the C9orf72_3 transgene, with each copy encoding the human *C9orf72* with a hexanucleotide repeat expansion in the intron between the alternatively-spliced non-coding first exons 1a and 1b. Each transgene copy has between 100-1000 repeats ([GGGGCC]₁₀₀₋₁₀₀₀). Hemizygous mice exhibit RNA foci and poly(GP) dipeptides in most neuronal populations of the brain by three months of age. These mice may be useful in applications related to amyotrophic lateral sclerosis and frontotemporal dementia.

Donating Investigator

Robert H Baloh, Cedars Sinai Medical Center

Cathleen Lutz, The Jackson Laboratory

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GENETIC OVERVIEW

Genetic Background

Generation

[N3+pN3F6](#)

(2020-01-10 00:00:00)

[Tg\(C9orf72_i3\)112Lutz](#)

Allele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$278.00 Domestic price for female 4-week

356.51 Domestic price for breeder pair

VIEW PRICE LIST

Details

Important Note

To insure the consistency of the genetics of its mice, over time and between orders, The Jackson Laboratory continues to verify breeders by Southern Blot for the transgenic integration and length of the hexanucleotide repeats in this strain. Over multiple generations of breeding, the transgenes have co-segregated, suggesting that the transgenes have integrated in one genomic location. While rare, we have occasionally identified mice where a presumed recombination event has led to the loss of an integration. Similar to humans, repeat expansions can be unstable from generation to generation. Although our breeders and their progeny currently appear stable, we strongly encourage investigators who choose to breed these mice, to evaluate breeders for length of the hexanucleotide repeats to ensure reproducibility of their experiments over time.

⊖ Detailed Description

The most common genetic mutation associated with human amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD) is a hexanucleotide repeat expansion in a non-coding region of the chromosome 9 open reading frame 72 gene (*C9orf72*). The *C9orf72* transgenes *C9orf72_3* and *C9orf72_2* encode the human *C9orf72* gene with a hexanucleotide repeat expansion in the intron between the alternatively-spliced non-coding first exons 1a and 1b.

The Tg(*C9orf72_3*) line 112 mice (Stock No. [023099](#)) have several tandem copies of the *C9orf72_3* transgene, with each copy having between 100-1000 repeats ([GGGGCC]₁₀₀₋₁₀₀₀).

The Tg(*C9orf72_2*) line 8 mice (Stock No. [023088](#)) have the *C9orf72_2* transgene with 15 hexanucleotide repeats ([GGGGCC]₁₅). Line 8 may be used as a control strain for Line 112.

Hemizygous mice from Tg(*C9orf72_3*) line 112 and Tg(*C9orf72_2*) line 8 are viable, fertile, born in Mendelian ratios and do not develop any locomotor or cognitive phenotype by 16 months of age.

By three months of age, however, hemizygous Tg(*C9orf72_3*) line 112 animals exhibit RNA foci (formed by hexanucleotide-repeat expansion-containing human C9ORF72 RNAs) and poly(GP) dipeptides (resulting from a non-ATG initiated translation of the repeat expansion) in most neuronal populations of the brain. No RNA foci or poly(GP) dipeptide phenotype is observed for hemizygous Tg(*C9orf72_2*) line 8.

The donating investigator reports that homozygous mice from Tg(*C9orf72_3*) line 112 and Tg(*C9orf72_2*) line 8 are viable and fertile, with no phenotype until at least three months of age. The homozygous colony at The Jackson Laboratory shows no overt paralysis with age (16 months old).

The Jackson Laboratory Southern Blot Protocol for this transgene is [available here](#) [2019]. Using this protocol, the expected band size for Stock No. 023099 is ~5 kbp.

+ Development

+ Expression Data

+ Control Suggestions

+ Selected References

⊖ Genetics

+ Tg(*C9orf72_i3*)112Lutzy

⊖ Disease/Phenotype

+ Disease Terms

+ Research Areas By Genotype

+ Mammalian Phenotype Terms by Genotype

+ References

Technical Support

CHAT OFFLINE

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Genotyping Protocols

QPCR: [c9ORF72-3'-qPCR](#)

Sanger sequencing: [3110043o21Rik^{em5Lutzy}-SEQ](#)

Standard PCR: [c9ORF72-3'](#)

[Genotyping resources and troubleshooting](#)

Dietary Information

LabDiet® 5K52 formulation (6% fat)

Breeding Considerations

When maintaining a live colony, hemizygous mice may be bred together, to wildtype (noncarrier) mice from the colony or to C57BL/6J inbred mice (Stock No. [000664](#)).

The Jackson Laboratory Southern Blot Protocol for this transgene is [available here](#) [2019]. Using this protocol, the expected band size for Stock No. 023099 is ~5 kbp.

[Additional Breeding and Husbandry Support](#)

Mating System

Hemizygote x Noncarrier

Noncarrier x Hemizygote

Citation

When using the Tg(C9orf72_i3)112 mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #023099 in your Materials and Methods section.

[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

Live Mouse

AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
4 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
5 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00

5 weeks	SEX	Noncarrier	\$78.51
		Noncarrier	\$78.51
6 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
6 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
7 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
7 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
8 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
8 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
9 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
9 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
10 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
10 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
11 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
11 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
12 weeks	Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
	Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$278.00
12 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51

Breeder Pair		
SEX	GENOTYPE	PRICE
Female	Hemizygous for Tg(C9orf72_i3)112Lutzy	\$356.51
Male	Noncarrier	
Female	Noncarrier	\$356.51
Male	Hemizygous for Tg(C9orf72_i3)112Lutzy	

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