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Stock No: 030504 | APP23 , APP K670N/M671L

Congenic, Transgenic



AVAILABLE

P L A C E O R D E R

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

Overview

Also Known As: APP23 , APP K670N/M671L

APP23 transgenic mice have the 6.7 kbp murine *Thy1* cassette driving expression of human APP isoform 751, containing the Swedish double mutation (APP₇₅₁*K670N/M671L) associated with Alzheimer's disease.

Donating Investigator

Derya R Shimshek, Novartis Pharma AG

R E A D M O R E +

GENETIC OVERVIEW

Genetic Background

Generation

N?⁺pN3F1

(2019-10-07 00:00:00)

Tg(Thy1-APP)³Somm

Allele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

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

RESEARCH APPLICATIONS

Neurobiology 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:

\$255.00 Domestic price for female 4-week

333.51 Domestic price for breeder pair

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

Details

Detailed Description

Mutations in human amyloid beta precursor protein gene (*APP*) are linked to familial Alzheimer's disease. Patients carrying the Swedish double mutation K670N/M671L (a mutation immediately adjacent to the β -secretase site in *APP*) exhibit memory loss and diagnostic criteria for Alzheimer's disease.

APP23 transgenic mice have the 6.7 kbp murine *Thy1* cassette driving expression of human APP isoform 751 containing the Swedish double mutation (APP₇₅₁*K670N/M671L). This *Thy1* promoter directs constitutive transgene expression in postnatal and adult neurons, with weak expression in lung (below detection level) and no expression in thymus. Unless stated otherwise, the phenotype below describes mice hemizygous for the APP23 transgene on the C57BL/6 (Sandoz/Novartis substrain) genetic background.

APP23 transgenic mice were originally identified with ~7-fold greater APP₇₅₁*K670N/M671L expression levels compared to endogenous APP. The donating investigator reports expression levels have been quite stable over 10-15 years. APP23 transgenic mice develop extensive β -amyloid pathology. A β deposits are first observed at 6-8 months of age. Congophilic plaques increase in size and number with age, occupying up to 25% of the neocortex and hippocampus in 24 month-old mice. Plaques are surrounded by activated microglia, astrocytes and dystrophic neurites containing hyperphosphorylated tau - although neurofibrillary tangles are not observed. Plaque development is faster in females than in males. Neuronal loss has been reported in the CA1 region of the

hippocampus. Mice also develop cerebral amyloid angiopathy (CAA), and microhemorrhages occur at later ages.

Deficits in spatial memory are observed (Morris water maze) at three months and become more severe with age. Memory deficits in passive avoidance were observed in 25 month-old mice - but not at younger ages. Age-associated changes in A β and tau levels in the cerebral spinal fluid (CSF) have been reported. The concentration of A β 42 in the CSF is relatively stable until 16 months of age and then declines, with a 60% reduction measured by 30 months. The decrease in A β 40 is less prominent. Total tau in CSF is elevated at 24-26 months of age.

The donating investigator reports that mice homozygous for the APP23 transgene on the C57BL/6 genetic background are viable and fertile but difficult to maintain (breed less efficiently). Homozygotes develop amyloid pathology earlier and faster than hemizygotes. Additionally, the homozygous behavioral phenotype has not yet been characterized (May 2017).

The donating investigator reports introgression onto other C57BL/6 substrain genetic backgrounds may increase the death rate during the first 3-6 months of age.

+ Development

+ Expression Data

+ Control Suggestions

+ Selected References

- Genetics

+ Tg(Thy1-APP)3Somm

- Disease/Phenotype

+ Disease Terms

+ Research Areas By Genotype

+ Mammalian Phenotype Terms by Genotype

+ References

- Technical Support

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

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

Standard PCR: [Tg\(Thy1-APP\)3Somm](#)

Probe: [Tg\(Thy1-APP\)3Somm Probe](#)

[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](#)).

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[Additional Breeding and Husbandry Support](#)

Mating System

Hemizygote x Noncarrier

Noncarrier x Hemizygote

Citation

When using the APP23, APP K670N/M671L mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #030504 in your Materials and Methods section.

[Animal Health Reports](#)

[Facility Barrier Level Descriptions](#)

 [AX18 \(Maximum\)](#)

➔ 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(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
4 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
5 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
5 weeks	Male	Noncarrier	\$78.51
6 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
6 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
7 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00

	SEX	Hemizygous for Tg(Thy1-APP)3Somm	
7 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
8 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
8 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
9 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
9 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
10 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
10 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
11 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
11 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
12 weeks	Female	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
	Male	Hemizygous for Tg(Thy1-APP)3Somm	\$255.00
12 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51

Breeder Pair		
SEX	GENOTYPE	PRICE
Female	Hemizygous for Tg(Thy1-APP)3Somm	\$333.51
Male	Noncarrier	
Female	Noncarrier	\$333.51
Male	Hemizygous for Tg(Thy1-APP)3Somm	

Related Products and Services		
Frozen Mouse Embryo	B6.Cg-Tg(Thy1-APP)3Somm/J Frozen Embryo	\$2595.00

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Phone: 207-288-6470

Email: TechTran@jax.org

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