B6;C3-Tg(Prnp-MAPT*P301S)PS19Vle

Stock No: 008169

Transgenic

PLEASE INQUIRE

PLACE ORDER

Ask Customer Service for an anticipated lead time

Overview

The PS19 mouse model harbors the T34 isoform of microtubule-associated protein tau with one N-terminal insert and four microtubule binding repeats (1N4R) encoding the human P301S mutation, all driven by the mouse prion protein promoter. These mice are useful in studying neurofibrillary tangles, neurodegenerative tauopathy and Alzheimer's disease.

Donating Investigator

Virginia M Lee, University of Pennsylvania

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GENETIC OVERVIEW

Genetic Background	Generation
	?+N3F9 (2019-07-19 00:00:00)

Tg(Prnp-MAPT*P301S)PS19Vle

Allele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE
Starting at:

$270.00 Domestic price for female 4-week

348.51 Domestic price for breeder pair

VIEW PRICE LIST

Details

Detailed Description

These PS19 transgenic mice (P301S Tg mice) express the P301S mutant form of human microtubule-associated protein tau (*MAPT*), under the direction of the mouse prion protein promoter (*Prnp*). The expression of the mutant human MAPT is five-fold higher than the expression of the endogenous mouse MAPT protein. Hyperphosphorylated, insoluble mutant human MAPT protein in the brain accumulates with age causing decreased microtubule binding/density. At three months of age, transgenic mice exhibit clasping and limb retraction when lifted by the tail, which progresses to limb weakness. By ten months of age the mice exhibit a hunched back and paralysis, followed by inability to feed. Transgenic mice have a median lifespan of approximately nine months with approximately 80% dying by 12 months. Histological analysis reveals neuron degeneration in hippocampus and ventricular dilatation (brain atrophy) by eight months of age, although significant neuron degeneration in the hippocampus occurs at approximately nine months of age. Neuron loss spreads to the amygdala, neocortex and entorhinal cortex by 12 months of age. Defective translocation of endoplasmic reticulum proteins in affected neurons is observed as early as three months of age. The onset of neurofibrillay tangle formation in the neocortex, amygdala, hippocampus, brain stem and spinal cord is five months of age. Transgenic mice display neuroinflammation with microglial activation and astrogliosis. The ultrastructure of the neurofibrillay tangle-like lesions detected is similar to that found in brain lesions of human Alzheimer's disease and tauopathy patients. Degradation of synaptic function is significant by six months of age. These mice cannot be bred to homozygosity as homozygous females do not mate.

The phenotype of PS19 transgenic mice described above is based on the published information available as of 2008. In 2012-2013, publications using PS19 mice on a B6C3F1 or B6C3 genetic background report attenuated formation of tau pathology (hyperphosphorylated tau inclusions prominent by 12 months of age, significant neuronal death after 12 months of age), as well as males developing tau pathology more consistently than females. It is not determined if these phenotype differences are observed for the PS19 colony at The Jackson Laboratory. To ensure genetically stability, we periodically refresh our colony onto the hybrid B6C3F1/J genetic background (Stock No. 100010). This was last performed March to November 2016.

As of October 2017, the Stock No. 008169 live colony is homozygous for the C57BL/6-derived functional *Pde6b*$^{+}$ allele (the C3H-derived *Pde6b*^{rd1} allele has been selectively removed). As of May 2019, the Stock No. 008169 live colony is homozygous for the *Tlr4*$^{+}$ allele.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(Prnp-MAPT*P301S)PS19Vle

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CHAT OFFLINE

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Standard PCR:Tg(Prnp-MAPT*P301S)PS19Vle
Standard PCR:Tg(Prnp-MAPT*P301S)PS19Vle
Standard PCR:Tg(Prnp-MAPT*P301S)PS19Vle-Chr3
Probe:Tg(Prnp-MAPT*P301S)PS19Vle-Chr3 Probe
Genotyping resources and troubleshooting

Dietary Information

LabDiet® 5K52 formulation (6% fat)

Breeding Considerations

When maintaining a live colony, these mice can be bred as hemizygotes. These mice cannot be bred to homozygosity as homozygous females do not mate.

Additional Breeding and Husbandry Support

Mating System

Hemizygote x Noncarrier
Noncarrier x Hemizygote

Citation

When using the B6;C3-Tg(Prnp-MAPT*P301S)PS19Vle/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #008169 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

AX10 (Standard)

Pricing & Availability

Please Inquire

Ask Customer Service for an anticipated lead time

Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

Live Mouse

AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
	Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
4 weeks	Female	Noncarrier	$78.51
	Male	Noncarrier	$78.51
5 weeks	Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
	Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
5 weeks	Female	Noncarrier	$78.51
	Male	Noncarrier	$78.51
6 weeks	Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
	Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
6 weeks	Female	Noncarrier	$78.51
	Male	Noncarrier	$78.51
7 weeks	Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
	Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
7 weeks	Female	Noncarrier	$78.51
	Male	Noncarrier	$78.51
8 weeks	Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
	Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$270.00
8 weeks	Female	Noncarrier	$78.51
	Male	Noncarrier	$78.51

Breeder Pair

SEX	GENOTYPE	PRICE
Female	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	$348.51
Male	Noncarrier	
Female	Noncarrier	$348.51
Male	Hemizygous for Tg(Prnp-MAPT*P301S)PS19Vle	

Related Products and Services

Frozen Mouse Embryo	B6;C3-Tg(Prnp-MAPT*P301S)PS19Vle/J	$2595.00

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Terms of Use

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All

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By Gene

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