B6;C3-Tg(Prnp-SNCA*A53T)83Vle/J

Stock No: 004479 | A53T -synuclein transgenic line M83

Transgenic

PLACE ORDER

0-2 week average lead time for 10 or more mice with age range
Also Known As: A53T alpha-synuclein transgenic line M83

M83 transgenic mice expresses the mutant human A53T alpha-synuclein under the direction of the mouse prion protein promoter. These mice may be useful in studying human neuronal alpha-synucleinopathies, such as familial Parkinson's Disease.

Donating Investigator

Virginia M Lee, University of Pennsylvania

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N7 × N7F14</td>
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<tr>
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<td>(2018-04-05 00:00:00)</td>
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Tg(Prnp-SNCA*A53T)83Vle

Allele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

RESEARCH APPLICATIONS

Neurobiology Research
Sensorineural Research
Details

Detailed Description

Mice homozygous for the transgenic insert are viable and normal in size. These transgenic mice express human A53T variant alpha-synuclein (full-length, 140 amino acid isoform) under the direction of the mouse prion protein promoter. At eight months of age, some homozygous mice develop a progressively severe motor phenotype. Presentation of the phenotype may manifest at 14-15 months of age (on average). Lax grooming, weight loss and diminished mobility precede movement impairment, partial limb paralysis, trembling and inability to stand. Immunohistochemistry analysis of mutants between eight to 12 months of age reveals widely distributed alpha-synuclein inclusions, with dense accumulation in the spinal cord, brainstem, cerebellum and thalamus. The appearance of alpha-synuclein aggregate inclusions parallels the onset of the motor impairment phenotype. Axons and myelin sheaths exhibit progressive ultrastructural degeneration. Immunoelectron microscopy and biochemical analysis show the inclusions in neurons are comprised primarily of 10-16 nm fibrils of alpha-synuclein. The structure, location and onset of the inclusions seen in the mutant mice resemble characteristics seen in human neuronal alpha-synucleinopathies, such as familial Parkinson's Disease. In addition, mice exhibit impaired odor discrimination and detection beginning at 6 months of age. Mice hemizygous for the transgenic insert develop similar phenotypic traits, but onset occurs later, between 22 and 28 months of age. Homozygous mice have a high incidence of nonproductive matings.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(Prrnp-SNCA*A53T)83Vle

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype
Genotyping Protocols
QPCR: Tg(SNACdNA)-qPCR
Genotyping resources and troubleshooting

Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations
The strain is maintained as a hemizygote on the same background. Homozygous mice have a high incidence of nonproductive matings. Coat colors expected from breeding are agouti or black.

Additional Breeding and Husbandry Support

Mating System
Homozygote x Hemizygote

Citation
When reporting the strain, please cite the originating article(s) and include JAX stock #004479 in your Materials and Methods section.

Facility Barrier Level Descriptions

Pricing & Availability

Repository Live

<table>
<thead>
<tr>
<th>Live Mouse</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<td>4 weeks</td>
<td>Female</td>
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<td>Male</td>
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<td>6 weeks Female</td>
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Breeder Pair

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Related Products and Services

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<tr>
<th>Product</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>$2,595.00 per straw or vial</td>
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</table>

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