**B6.129-Psen1<sup>tm1Mpm</sup>/J**

**Stock No:** 004193 | PS1M146VKI

- Congenic, Targeted Mutation

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**Also Known As:** PS1M146VKI, The Miles W. Miller Mouse

This strain is currently unavailable due to replenishing of cryopreserved stocks.

These mice carry a targeted mutation of the mouse Psen1 gene that results in expression of a presenilin-1 protein with the human familial Alzheimer’s disease-linked mutation PS1M146V.

**Donating Investigator**

George M Martin, University of Washington

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**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tr>
<td><strong>Psen1&lt;sup&gt;tm1Mpm&lt;/sup&gt;</strong></td>
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<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted</td>
<td>Psen1</td>
<td>presenilin 1</td>
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</tbody>
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**RESEARCH APPLICATIONS**

- Developmental Biology Research
- Neurobiology Research
- Mouse/Human Gene Homologs

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**VIEW GENETICS**

**VIEW ALL RESEARCH APPLICATIONS**
The targeted allele (PS1M146VKI) causes a mutation of the mouse Psen1 gene that results in expression of a presenilin-1 protein with the human familial Alzheimer's disease-linked mutation PS1M146V. The neo cassette was deleted from the targeted allele (using a CMV-Cre transgenic line of mice). Published findings indicate that this alteration should not influence the level of expression of mutant PS1. Northern blot analysis and RT-PCR determined mRNA expression of the targeted mutant allele is normal. Homozygous PS1M146VKI mice produce only the mutant gene product. Mice that express this targeted allele are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities. Neurodegeneration seen in wild-type mice caused by excitotoxin kainate treatment is increased and accelerated in this mutant strain. Cultured cells expressing the mutant protein exhibit perturbed neuronal calcium homeostasis. This mutant mouse strain represents a model that may be useful in studies of familial Alzheimer's disease in humans.

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Genotyping Protocols
Standard PCR: Psen1<sup>tm1Mpm</sup>
Pyrosequencing: Psen1<sup>tm1Mpm</sup>
End Point Analysis: Psen1<sup>tm1Mpm-EP</sup>
Genotyping resources and troubleshooting
Breeding Considerations
This strain originated on a B6;129 background, and has been backcrossed to C57BL/6 for at least 7 generations (11/01).

Additional Breeding and Husbandry Support

Citation
When using the PS1M146VKL mouse strain in a publication, please cite the originating article(s) and include JAX stock #004193 in your Materials and Methods section.

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All

By Allele

By Gene

By Collection

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TOMORROW'S CURES