B6.Cg-Pvalb-Fxn/J

Stock No: 029721 | Fxn flox/null::PV-Cre

Available

PLACE ORDER

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

Also Known As: Fxn\textsuperscript{fox/null}::PV-Cre

Fxn\textsuperscript{fox/null}::PV-Cre mice have a Cre-conditional frataxin allele, a global knockout frataxin allele and a parvalbumin neuron-specific Cre recombinase knockin allele - and are useful in studying Friedreich's Ataxia.

The Fxn\textsuperscript{fox/null}::PV-Cre genotype is compound heterozygous at the frataxin locus (floxed exon 2 and global knockout on respective homologous chromosomes) and heterozygous for the PV-Cre knockin allele. Due to early-onset ataxia, Fxn\textsuperscript{fox/null}::PV-Cre are distributed at 4-7 weeks of age.

In addition, we distribute the phenotypically-normal parental lines:

i. Stock No. 028520: C57BL/6J-congenic Fxn\textsuperscript{em2Lutz} (homozygous for frataxin floxed exon 2)
ii. Stock No. 030218: C57BL/6-congenic Pvalb\textsuperscript{tm1(cre)Arbr} Fxn\textsuperscript{em2.1Lutz} (heterozygous for both PV-Cre knockin and frataxin global knockout).

These breeders produce the affected Fxn\textsuperscript{fox/null}::PV-Cre genotype at a 1/4 frequency.

Our pre-clinical services offer scientific expertise, numerous in-life and end point measurements, phenotyping capabilities and flexible, customizable study design for compound evaluations using Friedreich’s Ataxia mouse models. See our full service platform.

Donating Investigator

Cathleen Lutz, The Jackson Laboratory

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GENETIC OVERVIEW

<table>
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<tr>
<th>Genetic Background</th>
<th>Generation</th>
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\textbf{Pvalb}^{tm1(cre)Arbr}

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<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tr>
<td>Targeted (Recombinase-expressing)</td>
<td>Pvalb</td>
<td>parvalbumin</td>
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The *Fxn* gene encodes mitochondrial frataxin protein which is involved in mitochondrial iron transport and respiration regulation. Mutations in this gene have been associated with Friedreich's Ataxia.

These mice carry the *Pvalb*<sup>tm1(cre)Arbr</sup> allele, expressing Cre recombinase in parvalbumin-expressing neurons, the *Fxn*<sup>fox</sup> (floxed exon 2; *Fxn*<sup>em2.Lutzy</sup>) allele and the *Fxn*<sup>null</sup> (global *Fxn* knock-out; *Fxn*<sup>em2.1Lutzy</sup>) allele. This triple mutant strain is designed to generate mice that are heterozygous for the *Fxn*<sup>null</sup> (global knock-out *Fxn*) allele with ablation of *Fxn* expression in parvalbumin-expressing neurons. These mice exhibit an observable ataxic phenotype onset at approximately 9 to 10 weeks of age and have a mean survival of approximately 17 weeks. Of note, parvalbumin is expressed in sperm resulting in ectopic Cre recombinase expression in the male germline of mice carrying the *Pvalb*<sup>tm1(cre)Arbr</sup> allele.
Expression Data

Control Suggestions

Genetics

*Pvalb*\textsuperscript{tm1(cre)Arbr}

*Fxr*\textsuperscript{em2Lutzy}

*Fxr*\textsuperscript{em2.1Lutzy}

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

**Genotyping Protocols**

- Standard PCR: *Fxn*\textsuperscript{em#Lutzy-KO}
- Standard PCR: *Pvalb*\textsuperscript{tm1(cre)Arbr}
- Standard PCR: *Fxn*\textsuperscript{tm1Mkn}
- Probe: *Fxnen#Lutzy-cKO* Probe

Genotyping resources and troubleshooting
Breeding Considerations

Stock No. 029721 at The Jackson Laboratory will be maintained by breeding the following phenotypically-normal mice:

i. female Stock No. 030218: C57BL/6-congenic Fxn\textsuperscript{null}::PV-Cre (heterozygous for the frataxin global knockout allele and heterozygous for the Pvalb\textsuperscript{tm1(cre)Arbr} allele)

ii. male Stock No. 028520: C57BL/6J-congenic Fxn\textsuperscript{em2Lutzy} (homozygous for the frataxin floxed exon 2 allele).

The Jackson Laboratory will offer these breeding pair for distribution. Offspring from these breeding units will generate the affected mutant animals (Fxn\textsuperscript{floxnull}::PV-Cre) at a frequency of 1/4.

The genotype of Fxn\textsuperscript{floxnull}::PV-Cre mice is compound heterozygous at the frataxin locus on chromosome 19 (Fxn\textsuperscript{floxnull}; floxed exon 2 allele on one homologous chromosome and a global knockout allele on the other homologous chromosome) and heterozygous for the Pvalb\textsuperscript{tm1(cre)Arbr} allele. Due to the early-onset ataxic phenotype of such mice, The Jackson Laboratory will only distribute Fxn\textsuperscript{floxnull}::PV-Cre animals at 4-7 weeks of age.

Of note, parvalbumin is expressed in sperm resulting in ectopic Cre recombinase expression in the male germline of mice carrying the Pvalb\textsuperscript{tm1(cre)Arbr} allele.

Additional Breeding and Husbandry Support

Mating System

Female heterozygous for Pvalb\textsuperscript{tm1(cre)Arbr} and Fxn\textsuperscript{em2.Lutzy} (see Stock 030218) and Male homozygous for Fxn\textsuperscript{em2Lutzy} (see Stock 028520)

Citation

When using the Fxn\textsuperscript{floxnull}::PV-Cre mouse strain in a publication, please cite the originating article(s) and include JAX stock #029721 in your Materials and Methods section.

Animal Health Reports

 Facility Barrier Level Descriptions

Pricing & Availability

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

Available

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Breeder Pair

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Terms of Use

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Email: TechTran@jax.org

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