Overview

Rhox10 floxed mice have loxP sites flanking exon 2 of the X chromosome-linked Rhox10 gene. Exposure to Cre recombinase removes the floxed sequence - creating a null allele. These Rhox10 floxed mice may be useful in studying spermatogenesis and fertility.

Donating Investigator
Dr. Miles Wilkinson, University of California San Diego

GENETIC OVERVIEW

Genetic Background
Generation
N7+pN1
(2020-12-09 00:00:00)

Rhox10<sup>tm1Wilk</sup>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Conditional ready (e.g. floxed))</td>
<td>Rhox10</td>
<td>reproductive homeobox 10</td>
</tr>
</tbody>
</table>

RESEARCH APPLICATIONS

Reproductive Biology Research
Details

Detailed Description

The Rhox10 gene encodes the homeobox transcription factor, RHOX10, which is expressed in the reproductive tract and is involved in the development and migration of spermatogonial stem cells.

The Rhox10 floxed allele has loxP sites flanking exon 2 of the Rhox10 gene. Prior to introduction of Cre recombinase, mice heterozygous or homozygous for the Rhox10 floxed allele are viable and fertile with normal breeding, and have no gross physical or behavioral abnormalities. However, the donating investigator reports that Rhox10 floxed mice have lower levels of Rhox10 mRNA expression than wild-type mice.

When Rhox10 floxed mice are bred to mice that express Cre recombinase, the resulting offspring will have exon 2 deleted - creating a null allele in the cells/tissues as determined by the Cre promoter. For example, when bred to germline Cre-expressing mice (E2A-Cre; see Stock No. 003724), the resulting Rhox10 global knock-out males exhibit reduced testis weight and lowered sperm count. The sperm exhibit abnormal morphology including perturbed head morphology and rolled back tails. Histological analysis also reveals a progressive decline in seminiferous tubule morphology consistent with a defect in spermatogonial stem cells, with tubule sections lacking germ cells when examined at 12 or 24 weeks (Song et al., 2016).

Development

Control Suggestions

Selected References

Genetics

Rhox10<sup>m1Wilk</sup>
Breeding Considerations

Both heterozygous/hemizygous and homozygous mice are viable and fertile with normal breeding, and no reported gross phenotypic or behavioral abnormalities. When maintaining a live colony, heterozygous mice may be bred together, to wildtype mice from the colony or to C57BL/6J inbred mice (Stock No. 000664). Alternatively, homozygous females and hemizygous male mice may be bred together.

Citation

When using the Rhox10<sub>flox</sub> mouse strain in a publication, please cite the originating article(s) and include JAX stock #035193 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

- FGB29 (Standard)
Available for Pre-order

Estimated to begin distribution on Jul 26, 2021

Domestic

Pricing effective for USA, Canada and Mexico shipping destinations

### LIVE MOUSE

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Heterozygous for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$255.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Homozygous for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$255.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Male</td>
<td>Hemizygous for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$255.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Wild-type for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Wild-type for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$78.51</td>
</tr>
</tbody>
</table>

### BREEDER PAIR

<table>
<thead>
<tr>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>Heterozygous for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td>$510.00</td>
</tr>
<tr>
<td>Male</td>
<td>Hemizygous for Rhox10&lt;sup&gt;tm1Wilk&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

**PAYMENT TERMS AND CONDITIONS**

Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

**THE JACKSON LABORATORY’S GENOTYPE PROMISE**

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. Therefore, we cannot guarantee a strain's phenotype will meet all expectations. To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

---

**Terms Of Use**

**TERMS OF USE**

*General Terms and Conditions*
ADDITIONAL USE RESTRICTIONS APPLY
Use of MICE by companies or for-profit entities requires a license prior to shipping.

LICENSING INFORMATION
Phone: 207-288-6470
Email: TechTran@jax.org

Related Strains

- All
- By Allele
- By Gene
- By Collection