B6;129S6-Lrat\textsuperscript{tm1Kpal}/J

Stock No: 018866

Targeted Mutation

Repository Live

PLACEMENT ORDER

Live colonies of this strain will be removed soon

Overview

Also Known As: B6.129S6-Lrat\textsuperscript{tm1Kpal}/J

Estimated Removal of Live Colony date: 08 November 2018

In this strain a NEO cassette replaces exon 1 of the Lrat gene. Mice homozygous for this targeted mutation exhibit vitamin A deficiency, blindness and have applications in retinoic acid synthesis, retinoid homeostasis, and vitamin A metabolism research.

Donating Investigator

Krzysztof Palczewski, Case Western Reserve University

READ MORE +

GENETIC OVERVIEW
Lrattm1Kpal

**Allele Type**
Targeted (Null/Knockout)

**Gene Symbol**
Lrat

**Gene Name**
lecithin-retinol acyltransferase (phosphatidylcholine-retinol-O-acyltransferase)

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**RESEARCH APPLICATIONS**
Metabolism Research
Research Tools
Cancer Research
Sensorineural Research

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**BASE PRICE**
Starting at:

$263.00 Domestic price for female

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**Details**

**Detailed Description**
Lecithin-retinol acyltransferase (phosphatidylcholine-retinol-O-acyltransferase) catalyzes the conversion of all-trans-retinol into all-trans-retinyl esters. Allelic variants of the human LRAT gene are implicated in severe early-onset retinal dystrophy and Leber congenital amaurosis. These mice carry a targeted mutation of the Lrat gene that replaces exon 1, including the ATG start codon, with a NEO cassette. Homozygous mice are viable, but exhibit vitamin A deficiency and blindness. Homozygotes are viable and fertile. However, on a vitamin A deficient diet, male homozygotes are often infertile. Levels of all-trans-retinyl esters are diminished in liver, lung, eye and blood. At 6 to 8 weeks of age, histological analysis reveals retinal rod outer segments (ROS) are approximately 35% shorter in length than control ROS. By 4.5 months of age, ROS from homozygotes are approximately half the length of wildtype control and exhibit a decrease of less than 10% in the number of photoreceptor nuclei. There is a significant loss of sensitivity of pupillary light responses and abnormal electroretinograms in homozygotes. Homozygotes are less susceptible to diethylnitrosamine induced hepatocarcinogenesis. During backcrossing, the Y chromosome may not have been fixed to the C57BL/6J genetic background.

**Development**

**Control Suggestions**
Genotyping Protocols
High Resolution Melting: Lrat^{tm1Kpal}
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as homozygotes. Homozygotes are viable and fertile. However, on a vitamin A deficient diet, male homozygotes are often infertile.
Additional Breeding and Husbandry Support

Mating System
Homozygote x homozygote

Citation
When using the 01886 J mouse strain in a publication, please cite the originating article(s) and include JAX stock #018866 in your Materials and Methods section.

Animal Health Reports

Pricing & Availability
Live colonies of this strain will be removed soon
Repository Live
Live Mouse

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
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<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Homozygous for Lrat	\textsuperscript{tm1Koa1}</td>
<td>$263.00</td>
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<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Lrat	\textsuperscript{tm1Koa1}</td>
<td>$263.00</td>
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By Gene

By Collection

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