B6;129S7-Cyp7a1<sup>tm1Rus</sup>/J

Stock No: 002751 | Cyp7-

Targeted Mutation

CRYO RECOVERY

REQUEST CRYORECOVERY

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Also Known As: Cyp7-

These Cyp7a1 knock-out mice exhibit wasting and early mortality with a lack of bile acids, and may be of use in applications related to the study of fat and vitamin malabsorption.

Donating Investigator

Dr. David Russell, Univ of Texas Southwest Med Ctr Dallas

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyp7a1&lt;sup&gt;tm1Rus&lt;/sup&gt;</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Cyp7a1</td>
<td>cytochrome P450, family 7, subfamily a, polypeptide 1</td>
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</tbody>
</table>

VIEW GENETICS

RESEARCH APPLICATIONS

Metabolism Research
Cardiovascular Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:
Heterozygous carriers of the disrupted Cyp7a1 gene are phenotypically normal, viable, and fertile. Homozygous animals appear normal at birth but most die within the first 18 days of life. The 10-15% of homozygotes that survive are fertile. Newborn animals with a homozygous mutation in the Cyp7a1 gene lack bile acids, causing fat malabsorption as manifest by severe steatorrhea (fatty stools), deficiency of fat-soluble vitamins, and wasting due to malnutrition. Approximately 40% of the homozygotes die between postnatal days 1-4; 45% between days 11-18. Vitamin supplements given to nursing mothers can prevent deaths during the early period; cholic acid supplements in the mother's diet can prevent deaths in the later period. Mutant pups born to homozygous mothers not maintained on dietary supplements are noticeably smaller than age-matched heterozygous and wild type siblings. The skin of nursing homozygotes can be dry and scaly in appearance. Nursing heterozygous and homozygous mothers and their mutant pups not treated with cholic acid develop an unusually oily coat. No immunoreactive or enzymatically active Cyp7a1 proteins are produced in homozygous mutants, but a novel "hybrid" mRNA present in heterozygous and homozygous animals is composed of sequences derived from the 5’ and 3’ ends of the mutated gene.
Genotyping Protocols
Standard PCR: Cyp7a1<sup>tm1Rus</sup>
Genotyping resources and troubleshooting

Breeding Considerations
This strain requires a cholic acid dietary supplement. Cholic acid is mixed and fed with milled food at the concentration 1g cholic acid/100g milled food. A vitamin supplement may also be required. Mice from the B6129F2/J colony (Stock 101045) may be used as controls. The B6129F2/J mice only provide an approximate match to this B6,129 background. Expected coat color from breeding: Black
Additional Breeding and Husbandry Support

Appearance
black
Related Genotype: a/a

Citation
When using the Cyp7a1<sup>tm1Rus</sup> mouse strain in a publication, please cite the originating article(s) and include JAX stock #002751 in your
Facility Barrier Level Descriptions
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Cryo Recovery
Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

<table>
<thead>
<tr>
<th>Cryorecovery - Domestic Pricing</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or wildtype for Cyp7a1&lt;sup&gt;tm1Rus&lt;/sup&gt;</td>
<td>$2,595.00</td>
</tr>
</tbody>
</table>

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.
Cryorecovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

Frozen Mouse Embryo $2,595.00 per straw or vial
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.

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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.

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Email: TechTran@jax.org

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Related Strains

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By Allele

By Gene

By Collection