Expression of Cyp46a1 is disrupted in this tau- lacZ fusion protein knockin strain. These mice may be useful for studying cholesterol turnover in brain tissues.

Donating Investigator
Dr. David Russell, Univ of Texas Southwest Med Ctr Dallas
A tau-β-galactosidase (lacZ) fusion protein, followed by a neomycin (neo) resistance cassette, replaces the 3' end of exon 1 of the Cyp46a1 gene, abolishing gene function. Cyp46a1 encodes the enzyme cholesterol 24-hydroxylase which is expressed mainly in the brain, with low expression in liver. Cholesterol 24-hydroxylase is involved in cholesterol biosynthesis and turnover, and has also been implicated in the development of amyloid plaques in Alzheimer's disease. Homozygous mice are viable and fertile. In these mice, lacZ staining is evident in the spinal cord, midbrain, and hindbrain at E11.5, with expression decreasing between E11.5 and E13.5. LacZ staining is intensified between E11.5 and E13.5 in cells of the telencephalon, and the cerebral cortex. Beginning at E13.5, expression is restricted to dividing neurons in the neuroepithelium and post-mitotic neurons of the primordial plexiform layer of the telencephalon. These mice display a 40% reduction of new cholesterol synthesis in the brain, while maintaining cholesterol homeostasis in the central nervous system.
Genotyping Protocols
Separated PCR: Cyp46a1^tm1Rus^/J mouse strain contains a targeted disruption of the Cyp46a1 gene.
Probe: Cyp46a1^tm1Rus^/J probe detects the Cyp46a1 mutation.
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together.

Additional Breeding and Husbandry Support

Mating System
Heterozygote x Heterozygote

Citation
When using the B6.129S7-Cyp46a1^tm1Rus^/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #017759 in your Materials and Methods section.

Animal Health Reports
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Cryo Recovery - Domestic Pricing

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous for Cyp46a1^tm1Rus^</td>
<td>$2,595.00</td>
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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.

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