B6.129S4-Adcyap1<sup>tm1Clw</sup>/J

Stock No: 009641

- Congenic, Targeted Mutation

**CRYO RECOVERY**

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

Mice that are homozygous for this targeted mutation of Adcyap1 (adenylate cyclase activating polypeptide 1) exhibit defective thermoregulation, hyperactivity, abnormal circadian phase shift, delayed testicular aging, increased sensitivity to experimental autoimmune encephalomyelitis (EAE) and impaired peripheral nerve axon regeneration. This mutant mouse strain may be useful in studies of photo-entrainment of circadian rhythm and other physiological changes induced by light, behavior, autoimmunity and inflammation, and peripheral nerve repair.

**Donating Investigator**

James Waschek, UCLA

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**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adcyap&lt;sup&gt;1&lt;sub&gt;tm1Clw&lt;/sub&gt;&lt;/sup&gt;</td>
<td></td>
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<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Adcyap1</td>
<td>adenylate cyclase activating polypeptide 1</td>
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**RESEARCH APPLICATIONS**

- Neurobiology Research
- Metabolism Research
- Immunology, Inflammation and Autoimmunity Research
- Reproductive Biology Research

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**VIEW GENETICS**

**VIEW ALL RESEARCH APPLICATIONS**
Details

Detailed Description

Mice that are homozygous for the targeted mutation are viable, but experience high postnatal mortality between postnatal week 1 and 2 due to thermoregulatory defect. The Donating Investigator reports that postnatal survival is improved if temperature is kept at 82.5 F. Homozygous males are fertile, homozygous females are subfertile. No gene product (protein) is detected by RIA (radioimmunoassay) analysis of hypothalamus, cerebral cortex, kidney, and stomach tissues in homozygotes. Homozygotes exhibit sustained hyperactivity, shortened circadian period and abnormal circadian phase shifting with 50% reduction in the magnitude of light cued phase shift. Homozygous mice lack the light stimulation increase of sympathetic nerve activity and plasma corticosterone that is observed in wildtype mice. Testicular aging is delayed in 15-month old male homozygotes; reactive oxygen species generation and apoptosis in the testis is reduced. Young male homozygotes (4 month old) exhibit decreased steroidogenesis with lower seminal vesicle weight, low testosterone level, and low expression levels of steroidogenic acute regulatory protein (StAR) and 3-hydroxysteroid dehydrogenase (3 HSD). After crush injury, homozygotes have impaired peripheral nerve axon regeneration. Homozygotes also have increased sensitivity to experimental autoimmune encephalomyelitis (EAE). This mutant mouse strain may be useful in studies of photo-entrainment of circadian rhythm and other physiological changes induced by light, behavior, autoimmunity and inflammation, and peripheral nerve repair.

Development

Control Suggestions

Selected References

Genetics

Adcyap1<sup>tm1Cil</sup>

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support
Genotyping Protocols
Separated PCR: Adcyap1<sup>tm1Clw</sup>
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as heterozygotes. Homozygotes experience high postnatal mortality between postnatal week 1 and 2 due to thermoregulatory defect and homozygous females are subfertile. The Donating Investigator reports that postnatal survival is improved if temperature is kept at 82.5 F.
Additional Breeding and Husbandry Support

Citation
When using the B6.129P2-Adcyap1<sup>tm1Clw</sup>/J mouse strain in a publication, please cite the originating article(s) and include JAX stock #009641 in your Materials and Methods section.

Facility Barrier Level Descriptions
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

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

<table>
<thead>
<tr>
<th>Domestic</th>
<th>International</th>
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<tbody>
<tr>
<td>Cryorecovery - Domestic Pricing</td>
<td>GENOTYPE</td>
</tr>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or Wild type for Adcyap1&lt;sup&gt;tm1Clw&lt;/sup&gt;</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.

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Frozen Mouse Embryo $2,595.00 per straw or vial
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