B6.129(Cg)-Gpx1<sup>tmYsh</sup>/MgoldJ

Stock No: 023919  |  Gpx1–/–

Congenic, 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: Gpx1–/–

This Gpx1 knockout strain is useful in studies of redox-mediated signaling and oxidative stress.

Donating Investigator

Matthew Goldberg, University of Texas Southwestern Medical Center at Dallas

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GENETIC OVERVIEW

Genetic Background  |  Generation

Gpx1<sup>tmYsh</sup>

<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>Gpx1</td>
<td>glutathione peroxidase 1</td>
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VIEW GENETICS

RESEARCH APPLICATIONS

Sensorineural Research  
Cell Biology Research  
Research Tools  
Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:
Gpx1 encodes an intracellular selenium-containing glutathione peroxidase that detoxifies hydrogen peroxide and is involved in regulation of redox-balance and redox-mediated signaling as well as protection against reactive oxygen species. These mice carry a targeted mutation in which exon 2 is replaced by a NEO cassette. Mice that are homozygous for this targeted mutation are viable and fertile. No gene product (mRNA) is detected by Northern blot analysis of brain, heart, kidney, liver, and lung tissue from homozygous mice.

Glutathione peroxidase activity is not detected in brain tissue and is significantly reduced in lens, heart, liver and small intestine. Homozygotes exhibit increased sensitivity to noise, with 4 week old mutant mice exhibiting more severe cochlear hair cell and nerve fiber loss after noise exposure than wildtype controls. Reactive oxygen species levels are increased in the brains of knock out mice, which are also resistant to kainic acid induced seizures and neuron damage. Knock out mice are less susceptible to striatal dopaminergic nerve injury after 1-methyl-4-phenyl-1,2,5,6-tetrahydropyridine (MPTP) treatment. Small intestine jejunum crypts regeneration is increased and ileal and jejunum crypts are more resistant to gamma radiation induced damage than wildtype controls. Knock out mice are more susceptible to myocarditis caused by coxsackievirus B3 infection. Arachidonic acid metabolism in mutant mice is impaired in platelets, which when incubated with arachidonic acid, produce decreased levels of 12-hydroxyeicosatetraenoic acid and more polar products when compared to wildtype controls. By 3 to 4 months of age, 13% of homozygous mice on the 129 background develop cataracts. During backcrossing, the Y chromosome may not have been fixed to the C57BL/6J genetic background.
Genotyping Protocols
Standard PCR: Gpx1<tm1Ysh> alternate1
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, these mice can be bred as homozygotes.
Additional Breeding and Husbandry Support

Citation
When using the Gpx1<tm1Ysh> mouse strain in a publication, please cite the originating article(s) and include JAX stock #023919 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>
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<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous or wildtype for Gpx1&lt;tm1Ysh&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
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