B6.Cg-Del(9Cyp1a2-CYP1A1)1Dwn/DwnJ

Stock No: 008599

Congenic, Deletion, Spontaneous Mutation, Targeted Mutation, Transgenic

CRYO RECOVERY

PLACE ORDER

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.
Also Known As: humanized hCYP1A1_1A2_Cyp1a1/1a2(-/-)_Ahr<sup>d</sup> mutant mice

These "humanized" hCYP1A1_1A2_Cyp1a1/1a2(-/-)_Ahr<sup>d</sup> mice carry the human CYP1A1 and CYP1A2 genes in the absence of functional mouse Cyp1a1 and Cyp1a2 orthologs, and also mimic the human poor-affinity aryl hydrocarbon receptor (AHR) by carrying the poor-affinity Ahr<sup>d</sup> allele derived from DBA/2J mice. These may be useful in drug or carcinogen metabolism research; specifically as a model for human risk assessment studies involving drug or environmental toxicants that may be substrates for the aryl hydrocarbon receptor (AHR) or cytochrome P450 family 1 members.

Donating Investigator

Daniel W Nebert, University of Cincinnati Medical Center

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tbody>
<tr>
<td>Tg(CYP1A1,CYP1A2)1Dwn</td>
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<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Transgenic (Inserted expressed sequence, Humanized sequence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahr&lt;sup&gt;d&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>Not Applicable</td>
<td>Ahr</td>
<td>aryl-hydrocarbon receptor</td>
</tr>
</tbody>
</table>
These "humanized" hCYP1A1_1A2_Cyp1a1/1a2(-/-)_Ahr\textsuperscript{d} mice carry the human CYP1A1 and CYP1A2 genes in the absence of functional mouse Cyp1a1 and Cyp1a2 orthologs, and also mimic the human poor-affinity aryl hydrocarbon receptor (AHR) by carrying the poor-affinity Ahr\textsuperscript{d} allele derived from DBA/2J mice (rather than the high-affinity Ahr\textsuperscript{b1} allele normally present on a C57BL/6J genetic background); all on a C57BL/6J (>99.8%) genetic background.

Mice homozygous for the Cyp1a2/Cyp1a1 targeted allele [Cyp1a1/1a2(-/-)], homozygous for the Ahr\textsuperscript{d} allele, and carrying the hCYP1A1_1A2 transgene are viable and fertile with normal lifespan. As the Cyp1a2/Cyp1a1(-) targeted allele lacks the coding regions of both Cyp1a1 and Cyp1a2 genes, no mouse CYP1A1 or CYP1A2 mRNA expression is observed in liver, lung or kidney.

Transgene expression of the orthologous human genes is observed in the same tissues. Because expression of the hCYP1A1_1A2 transgene is controlled by the mouse AHR, the low-affinity Ahr\textsuperscript{d} allele results in diminished CYP1A responses following exposure to AHR inducers (such as dioxin) when compared to hCYP1A1_1A2_Cyp1a1/1a2(-/-) mice harboring a high-affinity Ahr allele. These humanized hCYP1A1_1A2_Cyp1a2/Cyp1a1(-/-)_Ahr\textsuperscript{d} mice may be useful in drug or carcinogen metabolism research; specifically as a model for human risk assessment studies involving drug or environmental toxicants that may be substrates for the aryl hydrocarbon receptor (AHR) or cytochrome P450 family 1 members.
Genotyping Protocols
Standard PCR: Cyp1a2/Cyp1a1<sup>tm2Dwn</sup>
Standard PCR: Tg(CYP1A1)1Dwn
Standard PCR: Tg(CYP1A1)1Dwn
Standard PCR: Cyp1a2/Cyp1a1<sup>tm2Dwn</sup>

Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, mice homozygous for the Cyp1a1/1a2 targeted allele, homozygous for the Ahr<sup>d</sup> allele, and hemizygous for the hCYP1A1_1A2 transgene may be bred together.

Additional Breeding and Husbandry Support

Citation
When using the B6.Cg-Del(9Cyp1a2-Cyp1a1)1Dwn Ahr<sup>d</sup> Tg(CYP1A1,CYP1A2)1Dwn/DwnJ mouse strain in a publication, please cite the originating article(s) and include JAX stock #008599 in your Materials and Methods section.

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.

**Domestic and International**

Pricing effective for USA, Canada and Mexico shipping destinations

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Homozygous for Cyp1a2/Cyp1a1&lt;tm2Dwn&gt; Ahr&lt;d&gt;, Hemizygous or Non carrier for Tg(CYP1A1,CYP1A2)1Dwn</td>
<td>$2,854.50</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.

**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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Terms of Use

General Terms and Conditions

**Licensing Information**

Phone: 207-288-6470
Email: TechTran@jax.org

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