The single point mutation (\textit{Ldlr}) in this ENU mutagenized strain was originally named "Wicked High Cholesterol" (WHC) for a phenotype of elevated atherosclerotic lesion formations and reduced hepatosteatosis following an atherogenic diet. This mutant mouse strain may be useful in studies of familial hypercholesterolemia and atherosclerosis.

**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textit{Ldlr}^{Hlb301}</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemically induced (ENU)</td>
<td>\textit{Ldlr}</td>
<td>low density lipoprotein receptor</td>
</tr>
</tbody>
</table>

**RESEARCH APPLICATIONS**

- Internal/Organ Research
- Cardiovascular Research
- Mouse/Human Gene Homologs

**BASE PRICE**

Starting at:
Mice that are homozygous for the mutation are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities. This single base pair G to A transition mutation in exon 14, nucleotide 2096 was induced by ENU mutagenesis. The "Wicked High Cholesterol" (WHC) phenotype was mapped to the \textit{Ldlr}, low density lipoprotein receptor, gene. Although total plasma cholesterol levels do not differ between sexes, when fed a standard chow diet for 5 weeks, homozygous WHC males exhibit higher triglyceride and HDL levels than homozygous WHC females. When fed Western diet for 5 weeks, mutant WHC males exhibit higher HDL levels than female WHC mutants. When fed an atherogenic diet for 5 weeks, WHC homozygotes of both sexes develop elevated total cholesterol levels of more than a 4 fold increase when compared to WHC homozygotes on standard chow diet. Cholesterol and HDL levels of WHC homozygotes fed atherogenic diet for 5 weeks remain elevated 1 month after resuming chow diet. Atherosclerotic lesions develop in WHC homozygotes fed Western and atherogenic diet, with the largest lesions observed in homozygous WHC mice fed the atherogenic diet. Long term (34 weeks) atherogenic diet consumption results in formation of multiple cutaneous xanthomas in the distal limbs of WHC homozygotes, 42 weeks of age. Half of the WHC homozygotes develop gallstones.

On the atherogenic diet WHC homozygotes develop significantly greater HDL and triglyceride levels, as well as larger atherosclerotic lesions, when compared to mice carrying the \textit{Ldlr} targeted mutation (Stock No. 002207).

This mutant mouse strain may be useful in studies of familial hypercholesterolemia and atherosclerosis.

#### Development

#### Control Suggestions

#### Selected References

#### Genetics

\textit{Ldlr}^{Hlb301}

#### Disease/Phenotype

#### Disease Terms
Genotyping Protocols
Pyrosequencing: Ldlr
Genotyping resources and troubleshooting

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

Additional Breeding and Husbandry Support

Appearance
black
Related Genotype: a/a

Citation
When using the WHC mouse strain in a publication, please cite the originating article(s) and include JAX stock #005061 in your Materials and Methods section.

Animal Health Reports
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.
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.

The Jackson Laboratory's Genotype Promise

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. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.
KIND, EITHER EXPRESS, IMPLIED, OR STATUTORY, WITH RESPECT TO MICE, PRODUCTS OR SERVICES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF NON-INFRINGEMENT OF ANY PATENT, TRADEMARK, OR OTHER INTELLECTUAL PROPERTY RIGHTS.

Credit for PRODUCTS or SERVICES
In case of dissatisfaction for a valid reason and claimed in writing by a purchaser within ninety (90) days of receipt of, PRODUCTS or SERVICES, JACKSON will, at its option, provide credit or replacement for the PRODUCT received or the SERVICES provided; JACKSON makes no other representations and this shall be the exclusive remedy of the purchaser. Please note specific policy for live mice.

Animal Care and Use for SERVICES
Consistent with the requirement for a written understanding regarding animal care and use, the JACKSON Animal Care and Use Committee will review the animal care and use protocol(s) associated with any SERVICES to be performed at JACKSON, and JACKSON shall have ultimate responsibility and authority for the care of animals while on site or in JACKSON custody.

No Liability
In no event shall JACKSON, its trustees, directors, officers, employees, and affiliates be liable for any causes of action or damages, including any direct, indirect, special, or consequential damages, arising out of the provision of MICE, PRODUCTS, or SERVICES, including economic damage or injury to property and lost profits, and including any damage arising from acts or negligence on the part of JACKSON, its agents or employees. Unless prohibited by law, in purchasing or receiving MICE, PRODUCTS, or SERVICES from JACKSON, purchaser or recipient, or any party claiming by or through them, expressly releases and discharges JACKSON from all such causes of action or damages, and further agrees to defend and indemnify JACKSON from any costs or damages arising out of any third party claims.

MICE, PRODUCTS or SERVICES are to be used in a safe manner and in accordance with all applicable governmental rules and regulations.

The foregoing represents the General Terms and Conditions applicable to JACKSON’s MICE, PRODUCTS or SERVICES. In addition, special terms and conditions of sale of certain MICE, PRODUCTS, or SERVICES may be set forth separately in JACKSON web pages, catalogs, price lists, contracts, and/or other documents, and these special terms and conditions shall also govern the sale of these MICE, PRODUCTS and SERVICES by JACKSON, and by its licensees and distributors.

Acceptance of delivery of MICE, PRODUCTS or SERVICES shall be deemed agreement to these terms and conditions. No purchase order or other document transmitted by purchaser or recipient that may modify the terms and conditions hereof, shall be in any way binding on JACKSON, and instead the terms and conditions set forth herein, including any special terms and conditions set forth separately, shall govern the sale of MICE, PRODUCTS or SERVICES by JACKSON.

Related Strains

All

By Allele

By Gene

By Collection

All Related Strains