B6.Cg-Ifngr1<sup>tm1Agt</sup> Ifnar1<sup>tm1.2Ees</sup>/J

Stock No: 029098 | Ifngr1 Ifnar1 double knockout

Congenic, Targeted Mutation

Available

Also Known As: Ifngr1 Ifnar1 double knockout

These C57BL/6J-congenic Ifngr1 Ifnar1 double mutant animals harbor knockout alleles of the receptors for interferon-α and interferon-β. When homozygous for each allele, the double knockout mice exhibit a reduced immune response and increased susceptibility to infectious agents. These mice may be useful in studying antiviral immune responses, as well as interferon stimulation. Mouse mutants involving these genes have been used in studies of Zika virus pathogenesis.

READ MORE +

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F9</td>
</tr>
<tr>
<td></td>
<td>(2019-09-24 00:00:00)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ifngr1&lt;sup&gt;tm1Agt&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allele Type</td>
</tr>
<tr>
<td>Targeted (Null/Knockout)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ifnar1&lt;sup&gt;tm1.2Ees&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allele Type</td>
</tr>
<tr>
<td>Targeted (Null/Knockout)</td>
</tr>
</tbody>
</table>

VIEW GENETICS

Cancer Research
Immunology, Inflammation and Autoimmunity Research
Virology Research
Research Tools
Cell Biology Research

VIEW ALL RESEARCH APPLICATIONS
Starting at:

$230.00 Domestic price for female 4-week

VIEW PRICE LIST

Details

Detailed Description

These C57BL/6j-congenic Ifngr1 Ifnar1 double mutant animals harbor null alleles of the receptors for interferon-α and interferon-β. The phenotype of each individual mutation is described below. When homozygous for each null allele, the Ifngr1 Ifnar1 double knockout mice (Ifngr1 Ifnar1 dKO) may have even greater susceptibility to certain infections/agents. These mice may be useful in studying antiviral immune responses, as well as interferon stimulation. Mouse mutants involving these genes have been used in studies of Zika virus pathogenesis.

Ifngr1 encodes the ligand-binding chain (alpha) of the heterodimeric IFN-α receptor (found on macrophages). Ifnar1 encodes the type-I interferon-α receptor (type-I IFN receptor). Binding of their ligands (type-II IFN and type-I IFN, respectively) activates JAK-STAT signaling pathways critical for regulating growth, survival, differentiation, pathogen resistance and antiviral immune responses.

The Ifngr1 null allele (Stock No. 003288), often referred to as ‘G129’ when maintained on a 129 genetic background, encodes a non-functional protein lacking the cytoplasmic domain needed for signaling. Mice singly homozygous for this null allele (Ifngr1<sup>−/−</sup>) have normal T cell responses but are defective in natural resistance, evidenced by an increased susceptibility to infection by Listeria monocytogenes and vaccinia virus. Homozygotes are fertile and fertile with the immune deficiencies described above.

The Ifnar1 null allele (from Stock No. 028288) has exon 3 deleted; resulting in a non-functional protein (the exon 2-4 splice variant and frameshift leads to translation of 11 arbitrary (missense) amino acids within the N-terminal extracellular domain followed by a stop codon). Mice singly homozygous for this null allele (Ifnar1<sup>−/−</sup>) lack type-I IFN receptor function; leading to reduced immune response and increased susceptibility to viral infection. For example, in response to Pneumocystis lung infection, Ifnar1<sup>−/−</sup> animals develop a transient bone marrow crisis largely due to loss of neutrophils. Homozygous null mice are viable and fertile, with the immune deficiencies described above. Heterozygous mice are viable and fertile with no reported abnormalities.

Similar to other immunodeficient strains, maintaining Ifnar1<sup>−/−</sup> mice in high health status (specific pathogen-free) vivaria promotes overall colony health. If homozygous null animals are maintained in low health barrier rooms, the use of medicated water (e.g., sulfadimethoxine/sulfa or enrofloxacin/Baytril) is suggested to increase overall colony health.

Development

Control Suggestions

Selected References

Genetics
Genotyping Protocols
Standard PCR: Ifngr1<sup>1<sub>tm1Agt</sub></sup>
Standard PCR: Ifnar1<sup>1<sub>tm1Agt</sub></sup>
Genotyping resources and troubleshooting

Dietary Information
New Diet as of March 2015: Lab Diet<sup></sup> 5K0Q (6% fat)

Breeding Considerations
When maintaining a live colony, mice homozygous for both null alleles (Ifngr1 Ifnar1 dKO) may be bred together.

Mice homozygous for both null alleles (Ifngr1 Ifnar1 dKO) are viable and fertile but immunodeficient. As such, and similar to other immunodeficient strains, maintaining Ifngr1 Ifnar1 dKO mice in high health status (specific pathogen-free) vivaria promotes overall colony health. If Ifngr1 Ifnar1 dKO animals are maintained in low health barrier rooms, the use of medicated water (e.g., sulfadimethoxin-sulfa or enrofloxacin/Baytril) is suggested to increase overall colony health.

Additional Breeding and Husbandry Support
Hom Hom x Hom Ho

Citation

Animal Health Reports
Facility Barrier Level Descriptions

AX18 (Maximum)

Pricing & Availability

Live mice available in varying quantities. Ask Customer Service for details.
# Live Mouse

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Homozygous for Ifngr1&lt; sup &gt;&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ifngr1&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Homozygous for Ifngr1&lt; sup &gt;&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ifngr1&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Homozygous for Ifngr1&lt; sup &gt;&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ifngr1&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Homozygous for Ifngr1&lt; sup &gt;&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ifngr1&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td>8 weeks</td>
<td>Female</td>
<td>Homozygous for Ifngr1&lt; sup &gt;&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Ifngr1&lt; sub &gt;tm1Agt&lt; /sub &gt; Homozygous for Ifnar1&lt; sub &gt;tm1.2Ees&lt; /sub &gt;</td>
<td>$230.00</td>
</tr>
</tbody>
</table>

## Related Products and Services

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>B6.Cg-Ifngr1&lt;sub&gt;tm1Agt&lt;/sub&gt; Ifnar1&lt;sub&gt;tm1.2Ees&lt;/sub&gt;/J</td>
<td>$2595.00</td>
</tr>
</tbody>
</table>

## 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.

## Terms Of Use

**Terms of Use**

[General Terms and Conditions](#)
Notice regarding distribution of this strain.

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

JAX® Mice, Products & Services Conditions of Use

“MICE” means mouse strains, their progeny derived by inbreeding or crossbreeding, unmodified derivatives from mouse strains or their progeny supplied by The Jackson Laboratory (“JACKSON”). “PRODUCT(S)” means biological materials supplied by JACKSON, and their derivatives. “SERVICES” means projects conducted by JACKSON for other parties that may include but are not limited to the use of MICE or PRODUCTS. “RECIPIENT” means each recipient of MICE, PRODUCTS, or SERVICES provided by JACKSON including each institution, its employees and other researchers under its control. MICE or PRODUCTS shall not be: (i) used for any purpose other than internal research, (ii) sold or otherwise provided to any third party for any use, or (iii) provided to any agent or other third party to provide breeding or other services. Acceptance of MICE, PRODUCTS or SERVICES from JACKSON shall be deemed as agreement by RECIPIENT to these conditions, and departure from these conditions requires JACKSON’s prior written authorization.

No Warranty

MICE, PRODUCTS AND SERVICES ARE PROVIDED “AS IS”. JACKSON EXTENDS NO WARRANTIES OF ANY 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
Leading the search for
TOMORROW'S CURES