These Rag2/Il2rg compound mutant mice (also called Rag2γc mice) exhibit T cell, B cell and NK cell immunodeficiencies that make them effective transplant hosts for human immune cells.

Donating Investigator
Dr. Richard A. Flavell, Yale University School of Medicine

GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>F7°F21</td>
<td>(2020-03-17 00:00:00)</td>
</tr>
</tbody>
</table>

**Rag2<sup>tm1.1Flv</sup>**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Rag2</td>
<td>recombination activating gene 2</td>
</tr>
</tbody>
</table>

**Il2rg<sup>tm1.1Flv</sup>**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Il2rg</td>
<td>interleukin 2 receptor, gamma chain</td>
</tr>
</tbody>
</table>

RESEARCH APPLICATIONS

Research Tools
Immunology, Inflammation and Autoimmunity Research
Both the *Rag2* and the X-linked *Il2rg* genes were targeted in these compound mutant mice. Homozygous *Rag2* and hemizygous male/homozygous female *Il2rg* animals lack T, B, and NK cells. Their immunodeficiencies make them particularly useful as transplant hosts. Liver hematopoietic stem and progenitor cell transplants create a humanized model that may be used to develop and test novel immune therapeutic and preventative strategies.

The creation of this strain was funded by the Bill and Melinda Gates Foundation.
Genotyping Protocols
Standard PCR: Laragen
Separated MCA: Rag2 Alternate 1
Standard PCR: Il2rg Alternate 1
QPCR: Generic Neo Quantitative PCR-QPCR-1.2
Standard PCR: Generic Neo
Standard PCR: Rag2
Probe: Generic Neo

Genotyping resources and troubleshooting

Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations

When maintained as a live colony, mice that are both homozygous for the Rag2 mutation and hemizygous/homozygous for the X-linked Il2rg mutation may be intercrossed.

Additional Breeding and Husbandry Support
Mating System
See "Breeding Considerations"

Citation
When using the Rag2-γc- mouse strain in a publication, please cite the originating article(s) and include JAX stock #014593 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions

AX11 (Maximum)
Available Now

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

**Domestic Internationa**

Pricing effective for USA, Canada and Mexico shipping destinations

### 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 Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Homozygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Male</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Hemizygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Homozygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Male</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Hemizygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Homozygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Male</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Hemizygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Homozygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Male</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Hemizygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>8 weeks</td>
<td>Female</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Homozygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
<tr>
<td>8 weeks</td>
<td>Male</td>
<td>Homozygous for Rag2&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
<td>Hemizygous for Il2rg&lt;sup&gt;tm1.1Flv&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

### Related Products and Services

**Frozen Mouse Embryo**

*C129S4-Rag2<sup>tm1.1Flv</sup> Il2rg<sup>tm1.1Flv</sup>/J*  

$2595.00

**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.
Terms Of Use

General Terms and Conditions

Additional Use Restrictions Apply

NOT AVAILABLE TO COMPANIES OR FOR COMMERCIAL USE

Strain(s) not available to companies or for-profit entities.

License 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
- By Gene
- By Collection

All Related Strains

DO YOU NEED BALB/c MICE?
Rely on JAX to provide the models you need, when you need them.