**B6;C3Fe a/a-Csf1<sup>so</sup>/J**

**Stock No:** 000231 | osteopetrosis

- Spontaneous Mutation

---

**PLACE ORDER**

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

---

**Overview**

**Also Known As:** osteopetrosis

Mice homozygous for the osteopetrosis spontaneous mutation (Csf1<sup>so</sup>) may be useful to study the role of glia in neurological disease.

**READ MORE +**

---

**GENETIC OVERVIEW**

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N5</td>
</tr>
<tr>
<td></td>
<td>(2018-12-21 00:00:00)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>a</td>
<td>nonagouti</td>
</tr>
</tbody>
</table>
**Csf1<sup>op</sup>**

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous</td>
<td>Csf1</td>
<td>colony stimulating factor 1 (macrophage)</td>
</tr>
</tbody>
</table>

---

**RESEARCH APPLICATIONS**

Neurobiology Research  
Developmental Biology Research  
Mouse/Human Gene Homologs  
Research Tools  
Internal/Organ Research  
Cancer Research  
Endocrine Deficiency Research  
Immunology, Inflammation and Autoimmunity Research

---

**BASE PRICE**

Starting at:

- $278.00 Domestic price for female
- $483.90 Domestic price for breeder pair

---

**Details**

**Detailed Description**

Mice homozygous for the osteopetrosis spontaneous mutation (Csf1<sup>op</sup>) are viable and exhibit osteopetrosis. The osteoclasts are the primary cell type affected in homozygous mutant mice. This results in a generalized macrophage deficiency, monocytopenia, and defective bone remodeling. Homozygous mutant mice also have abnormal calcium regulation, impaired dental growth and female mice fail to lactate. Total leukocyte counts are reduced and marrow cells are decreased to one-tenth of normal control mice. Homozygous mutant mice have a deficient microglia and macrophage response, and therefore may be useful tools to study the role of glia in neurological disease if mated to transgenic models of neurodegenerative disease.

Homozygous pups are identifiable by their phenotype at 10 days of age by absence of incisors and by a domed skull. Unfortunately, ~50% of homozygotes die around weaning age. If they are to survive the weaning process, they must be provided with crushed food in the bottom of the cage. A soft rodent diet could also be used. Those that survive weaning may live up to 6 months.

---

**Development**

---

**Control Suggestions**
Genotyping Protocols
Sanger sequencing: Cs31^op
Probe: Cs31^op Probe
Genotyping resources and troubleshooting

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

Breeding Considerations
Since 2010, The Jackson Laboratory live colony has been maintained by breeding mice heterozygous for Cs31^op to B6C3FeF1/J a/a mice (Stock No. 001022).

Additional Breeding and Husbandry Support

Mating System
Heterozygous x B6C3FeF1/J a/a Stock No. 001022
B6C3FeF1/J a/a Stock No. 001022 x Heterozygou

Appearance
black, osteopetrosis
Related Genotype: a/a Cs31^op/Cs31^op
black, unaffected
Related Genotype: a/a Cs31^op/+ or a/a ?/+ 

Citation
When using this osteopetrosis mouse strain in a publication, please cite the originating article(s) and include JAX stock #000231 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

FG29 (Standard)
Pricing & Availability

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

Domestic | International
Pricing effective for USA, Canada and Mexico shipping destinations

<table>
<thead>
<tr>
<th>Live Mouse</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td>$278.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td>$278.00</td>
</tr>
<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Wild-type for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Wild-type for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td>$78.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Breeder Pair</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td>$556.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>B6C3FeF1/J a/a (001022)</td>
<td>$483.90</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>B6C3FeF1/J a/a (001022)</td>
<td>$483.90</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Heterozygous for Csf1&lt;sup&gt;op&lt;/sup&gt;</td>
<td></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
JAX® Mice, Products & Services Conditions of Use

**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.