**B6.129/P2mrCgn/J**

Stock No: 002251 | IL-10 KO

- Congenic, Targeted Mutation

**AVAILABLE NOW**

**PLACE ORDER**

Sized to accommodate orders of up to 10 or more with age range. Ask Customer Service for details.

---

**Overview**
Also Known As: Il-10 KO

B6.129P2-Il10\textsuperscript{tm1Cgn}/J mutant mice spontaneously develop a chronic inflammatory bowel disease (IBD). Il10-deficiency is associated with altered lymphocyte and myeloid profiles, elevated serum amyloid A levels, altered responses to inflammatory or autoimmune stimuli, increased prevalence of colorectal adenocarcinoma, and spontaneous development of chronic enterocolitis. Il10-deficient mice exhibit a significant increase in peripheral blood granulocyte populations upon lesion development.

Donating Investigator
Herbert C. Morse III, Laboratory of Immunopathology, NIAID, NI

---

**GENETIC OVERVIEW**

**Gene Symbol**
- **Il10**

**Gene Name**
- interleukin 10

---

**RESEARCH APPLICATIONS**

- Immunology, Inflammation and Autoimmunity Research
- Cancer Research
- Hematological Research
Mice homozygous for the $\textit{Il10}^{\text{tm1Cgn}}$ targeted mutation are viable and fertile when housed under specific pathogen free (SPF) conditions. Under conventional housing conditions, $\textit{Il10}$-deficiency is associated with altered lymphocyte and myeloid profiles, elevated serum amyloid A levels, altered responses to inflammatory or autoimmune stimuli (both endogenous and induced), increased prevalence of colorectal adenocarcinoma (especially on 129/Sv and, to a lesser extent, BALB/c genetic background), and spontaneous development of chronic enterocolitis (see below). As The Jackson Laboratory Repository maintains these mice at high health status conditions (high SPF), the observed or experimentally-induced $\textit{Il10}$-deficient phenotype may vary from that previously published using mice from conventional mouse rooms. These IL-10 mutant mice may be useful studying inflammatory bowel disease (IBD) (Crohn's disease (CD) and/or colitis), cancer, innate and adaptive immunity, and many other areas of inflammatory or autoimmunity research.

The onset and severity of both spontaneous and experimentally-induced inflammatory phenotype of $\textit{Il10}$-deficient mice is strongly influenced by the genetic background and the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained.

For example, inflammatory bowel disease (IBD; colitis and Crohn's disease) severity in mouse models is dependent upon interactions between specific genetic background and environmental factors (an as yet undefined component of the enteric flora of which $\textit{Helicobacter}$ spp. appear to be associated, but not specifically the environmental trigger). Both spontaneous and induced models of IBD demonstrate that susceptibility to intestinal inflammation varies markedly among inbred strains of mice. Generally, for $\textit{Il10}$-deficient models on defined genetic backgrounds, the severity of colitis-related characteristics is most severe on C3H/HeJ Bir (Stock No. 004326 and Stock No. 003968) or 129/Sv (Stock No. 004368), intermediate on BALB/cJ (Stock No. 004333) or NOD/Lt (Stock No. 004266), and least severe on C57BL/10 (Stock No. 002250) or C57BL/6J (Stock No. 002251). Furthermore, the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained significantly alter the onset and severity of spontaneous IBD; higher SPF conditions are associated with attenuated colitis. $\textit{Il10}$-deficient mice on both the C3H/HeJ Bir and C57BL/6J genetic backgrounds exhibit a significant increase in peripheral blood granulocyte populations upon lesion development and this metric may be used as a robust non-lethal assessment of $\textit{Il10}$-deficiency induced colitis onset and severity. Other indications of $\textit{Il10}$-deficiency induced colitic lesion onset may include perianal ulceration (C3H/HeJ Bir background) or rectal prolapse (C57BL/6J background).
### Disease/Phenotype

#### Disease Terms

#### Research Areas By Genotype

#### Mammalian Phenotype Terms by Genotype

#### References

### Technical Support

**Genotyping Protocols**

- Standard PCR: $\text{Il10}^{\text{tm1Cgn}}$
- Standard PCR: $\text{Il10}^{\text{tm1Cgn}}$

**Genotyping resources and troubleshooting**

**Dietary Information**

- LabDiet® 5K52 formulation (6% fat)

**Breeding Considerations**

This strain is a good breeder.

When maintaining a live colony, homozygous mice may be bred together. As homozygous mice are more susceptible to pathogenic bacteria, high specific pathogen-free (SPF) conditions are recommended for optimal breeding. However, the onset and severity of both the spontaneous and experimentally-induced inflammatory phenotype of $\text{Il10}$-deficient mice is strongly influenced by the genetic background and the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained and such high SPF conditions may attenuate the desired $\text{Il10}$-deficient phenotype.

**Additional Breeding and Husbandry Support**

**Mating System**

- Homozygote x Homozygote

**Appearance**

- black

**Related Genotype:** $a/a$

**Citation**

When using the Il-10 KO mouse strain in a publication, please cite the originating article(s) and include JAX stock #002251 in your Materials and Methods section.

**Animal Health Reports**

**Facility Barrier Level Descriptions**

- RB16 (Maximum)

### Pricing & Availability

Sized to accommodate orders of up to 10 or more with age range. 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>3 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$136.05</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$138.64</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$136.05</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$138.64</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$136.05</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$138.64</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$141.20</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$143.79</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$146.35</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$148.94</td>
</tr>
<tr>
<td>8 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$151.50</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$154.09</td>
</tr>
<tr>
<td>9 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$156.65</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$159.24</td>
</tr>
<tr>
<td>10 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$161.80</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$164.39</td>
</tr>
<tr>
<td>11 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$166.95</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$169.54</td>
</tr>
<tr>
<td>12 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$172.10</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$174.69</td>
</tr>
<tr>
<td>13 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$177.25</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$179.84</td>
</tr>
<tr>
<td>14 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$182.40</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$184.99</td>
</tr>
<tr>
<td>15 weeks</td>
<td>Female</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$187.55</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Homozygous for Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</td>
<td>$190.14</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

Additional Use Restrictions Apply
Use of MICE by companies or for-profit entities requires a license prior to shipping.
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.
Leading the search for
TOMORROW'S CURES