C57BL/6J

Stock No: 000664 | Black 6

Inbred Strain

READILY AVAILABLE

PLACE ORDER

Readily available in any quantity needed.

Also Known As: Black 6, B6, B6J, C57 Black

C57BL/6J is the most widely used inbred strain and the first to have its genome sequenced. Although this strain is refractory to many tumors, it is a permissive background for maximal expression of most mutations. C57BL/6J mice are resistant to audiogenic seizures, have a relatively low bone density, and develop age related hearing loss. They are also susceptible to diet-induced obesity, type 2 diabetes, and atherosclerosis. Macrophages from this strain are resistant to the effects of anthrax lethal toxin.

Study-ready aged C57BL/6J males and females between 25 - 78 weeks of age available for order.

READ MORE +

Genetic Background

Generation

Contact Technical Support
Developmental Biology Research
Hematological Research
Neurobiology Research
Sensorineural Research
Cardiovascular Research
Diabetes and Obesity Research
Research Tools
Metabolism Research

Starting at:
$20.79 Domestic price for male 3-week

Volume Pricing Available!
for select shipping destinations
Click for Details

Details

Important Note
This strain is homozygous for Cdh23-shi, the age-related hearing loss 1 mutation, which on this background results in progressive hearing loss with onset after 10 months of age.

Detailed Description
C57BL/6 is the most widely used inbred strain. It is commonly used as a general purpose strain and background strain for the generation of congenics carrying both spontaneous and induced mutations. Although this strain is refractory to many tumors, it is a permissive background for maximal expression of most mutations. C57BL/6J mice are used in a wide variety of research areas including cardiovascular biology, developmental biology, diabetes and obesity, genetics, immunology, neurobiology, and sensorineural research. C57BL/6J mice are also commonly used in the production of transgenic mice. Overall, C57BL/6 mice breed well, are long-lived, and have a low susceptibility to tumors. Primitive hematopoietic stem cells from C57BL/6J mice show greatly delayed senescence relative to BALB/c and DBA/2J. This is a dominant trait. Other characteristics include: 1) a high susceptibility to diet-induced obesity, type 2 diabetes, and atherosclerosis; 2) a high incidence of microphthalmia and other associated eye abnormalities; 3) resistance to audiogenic seizures; 4) low bone density; 5) hereditary hydrocephalus (early reports indicate 1–4%); 6) portosystemic shunts (~5%); 7) hairloss associated with overgrooming, 8) a preference for alcohol and morphine; 9) late-onset hearing loss; and 10) increased incidence of hydrocephalus and malocclusion.
C57BL/6J mice fed a high-fat diet develop obesity, mild to moderate hyperglycemia, and hyperinsulinemia (see JAX® Diet-induced Obesity (DIO) Models). C57BL/6J mice fed an atherogenic diet (1.25% cholesterol, 0.5% cholic acid and 15% fat) for 14 weeks develop lesions in the range of 4500 to 8000 um² atherosclerotic aortic lesions/aortic cross-section. The variation in aortic lesions found among various inbred strains has led to the identification of the existence of eight genes affecting atherosclerosis, Ath1 to Ath8. C57BL/6J mice also develop severe and progressive hearing loss later in life. Histopathological changes associated with age-related hearing loss include the disruption of both outer and inner hair cells. C57BL/6 mice are also more susceptible to noise-induced hearing loss. Age related hearing loss b1 (Ahbl), a major gene responsible for this hearing loss, was mapped in an intersubspecific backcross by measuring elevated auditory-evoked brainstem response (ABR) thresholds. Ahbl is located on Chromosome 10 near marker D10Mit. Cheers and McKenzie found C57BL/6J resistant to listeriosis. A naturally occurring deletion in nicotinamide nucleotide transhydrogenase (Nnt) exons 7-11 occurred in C57BL/6J sometime prior to 1984. This deletion results in the absence of the NNT protein, and is associated with impaired glucose homeostasis control and reduced insulin secretion. This mutation is not found in C57BL/6J, C57BL/6N, C57BL/6NJ, C57BL/6ByJ, C57BL/10J, C57L/J, or C58/J (Toye AA, et al, Diabetologia, 2005). Since C57BL/6JEi separated from C57BL/6J in 1976, the Nnt deletion arose sometime between 1976 and 1984. Because of the n-Tr20⁻¹ point mutation, which is also present in C57BL/6JEiJ but not C57BL/6NJ or C57BL/6ByJ, extracts from the cerebellum of C57BL/6J mice have increased ribosomal pausing at AGA codons compared with that of other inbred strains (Ishimura et al., 2014).

C57BL/6J was the DNA source for the international collaboration that generated the first high quality draft sequence of the mouse genome. 5 SNP differences have been identified that distinguish C57BL/6J from C57BL/6ByJ and C57BL/6NJ. Both C57BL/6ByJ and C57BL/6NJ type as follows: 08-015199792-M (rs3709624) is C; 11-004367508-M (rs3659787) is A; 13-041017317-M (rs722313) is C; 15-057561875-M (rs13702158) is G; 19-049914266-M (rs724876) is T. C57BL/6J types as follows: 08-015199792-M (rs3709624) is T; 11-004367508-M (rs3659787) is G; 13-041017317-M (rs722313) is T; 15-057561875-M (rs13702158) is G; 19-049914266-M (rs724876) is G (Pekov and Wiles, 2004). Others have subsequently identified further SNP differences between sublines of C57BL/6 (Mekada et al., 2009, Zurita et al., 2010).

**Development**

**Selected References**

**Genetics**

**Glucos1**<sup>C57BL/6J</sup>

**Glucos2**<sup>C57BL/6J</sup>

**P2rx7<sup>fastl</sup>**

**Fbrwt2**<sup>C57BL/6J</sup>

**Fbrwt1**<sup>C57BL/6J</sup>

**Apobec3<sup>Rob</sup>**

**Cdhr23<sup>dm</sup>**

**Glucos2**<sup>C57BL/6J</sup>

**Mx1<sup>3l</sup>**

**Ahr<sup>b-1</sup>**
Nnt<sup>5<sup>7BL/6J</sup></sup>
Cd5<sup>b</sup>
Micrl<sup>i</sup>
Nlrp12<sup>5<sup>7BL/6J</sup></sup>
n-TRtct5<sup>m1j</sup>
Aanat<sup>5<sup>7BL/6J</sup></sup>

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

Phenotype Information

References

Technical Support

Genotyping Protocols
End Point Analysis: H<sup>2b</sup> rs253049200-Alt 1-EP
Separated MCA: Nnt<sup>5<sup>7BL/6J</sup></sup>
Standard PCR: Nnt<sup>5<sup>7BL/6J</sup></sup>
Genotyping resources and troubleshooting
Inbred mouse strains are maintained through sibling (sister x brother) matings; no genotyping required.

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

Breeding Considerations
This strain is an exceptional breeder.
Additional Breeding and Husbandry Support

Mating System
Sibling x Sibling
Appearance
black
Related Genotype: a/a

Citation
Animal Health Reports
When using the Black 6 mouse strain in a publication, please include JAX stock #000664 in your Materials and Methods section.

Facility Barrier Level Descriptions
- AX4 (Standard)
- AX8 (Standard)
- MP15 (Standard)
- RB13 (Maximum)
- MP24 (High)
- RB15 (Maximum)
- RB12 (Maximum)
- AX5 (Standard)
- AX29 (Maximum)
- RB08 (Maximum)
- AX3 (High)
- RB03 (Maximum)
- MP23 (Standard)
- AX1 (Standard)
- MP14 (Maximum)
- RB09 (Maximum)
- AX18 (Maximum)
- RB17 (High)
- RB10 (Maximum)
- RB16 (Maximum)
- RB06 (Maximum)
- RB07 (Maximum)
- RB11 (Maximum)
- RB05 (Maximum)
- RB04 (Maximum)

:`~ Pricing & Availability

Readily available in any quantity needed.

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

VIEW AGED (25+ WEEKS) MOUSE INFORMATION

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>Not Applicable</td>
<td>$22.94</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$20.79</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$23.63</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$21.61</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$25.32</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$24.76</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$26.05</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$25.46</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$27.53</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$27.42</td>
</tr>
<tr>
<td>8 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$28.34</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$28.23</td>
</tr>
<tr>
<td>9 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$28.63</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$28.23</td>
</tr>
<tr>
<td>10 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$38.42</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$38.05</td>
</tr>
<tr>
<td>11 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$39.43</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$39.80</td>
</tr>
<tr>
<td>12 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$40.55</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$40.10</td>
</tr>
<tr>
<td>13 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$40.81</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$44.96</td>
</tr>
<tr>
<td>14 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$42.21</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$48.78</td>
</tr>
<tr>
<td>15 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$45.01</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$54.25</td>
</tr>
<tr>
<td>16 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$48.04</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$54.25</td>
</tr>
<tr>
<td>17 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$51.08</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$57.54</td>
</tr>
<tr>
<td>18 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$54.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$60.76</td>
</tr>
<tr>
<td>19 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$56.80</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$63.94</td>
</tr>
<tr>
<td>20 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$59.73</td>
</tr>
<tr>
<td>21 weeks</td>
<td>SEX</td>
<td>Not Applicable</td>
<td>$67.22</td>
</tr>
<tr>
<td>----------</td>
<td>-----</td>
<td>----------------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Not Applicable</td>
<td>$62.64</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$70.58</td>
</tr>
<tr>
<td>22 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$65.79</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$74.06</td>
</tr>
<tr>
<td>23 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$68.71</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$80.70</td>
</tr>
<tr>
<td>24 weeks</td>
<td>Female</td>
<td>Not Applicable</td>
<td>$71.61</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Not Applicable</td>
<td>$86.80</td>
</tr>
</tbody>
</table>

**Volume Pricing Details**

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>VOLUME PRICING</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>5% off</td>
</tr>
<tr>
<td>200</td>
<td>10% off</td>
</tr>
</tbody>
</table>

**Volume Pricing Program**
Quantities: Volume pricing is automatically applied when a minimum quantity per strain for a shipment is reached.
Sexes: Sexes of the same strain may be combined to reach minimum quantity levels to receive the volume pricing.
Shipments: All shipping destinations qualify.
This strain is available from some international Charles River (CR) breeding facilities in Japan and/or Europe. For more information, see the Worldwide Distributor List for JAX® Mice.

**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

QUESTIONS ABOUT TERMS OF USE

Licensing Information
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