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.

Also Known As: B6/J

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Study-ready aged C57BL/6J males and females between 25 - 90 weeks of age available for order.
Important Note
This strain is homozygous for Cdh23<sup>ahl</sup>, the age related hearing loss 1 mutation, which on this background results in progressive hearing loss with onset after 10 months of age.
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, with the disruption of both outer and inner hair cells, due to the Cdh23 allele. 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(J, C57BL/6N, C57BL/6NJ, C57BL/6ByJ, C57BL/10J, C57L/J, or C58/J (Toye AA, et al, Diabetologia, 2005). Since 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 (rs3722313) is C; 15-057561875-M (rs3702158) is G; 19-049914266-M (rs3724876) is T. C57BL/6J types as follows: 08-015199792-M (rs3709624) is T; 11-004367508-M (rs3659787) is G; 13-041017317-M (rs3722313) is T; 15-057561875-M (rs3702158) is A; 19-049914266-M (rs3724876) is G (Petkov and Wiles, 2004.) Others have subsequently identified further SNP differences between sublines of C57BL/6 (Mekada et al., 2009, Zurita et al., 2010).
Genotyping Protocols
End Point Analysis: H2rs253049200-Alt 1-EP
Separated MCA: Nnt
Separated MCA: Nnt
Standard PCR: Nnt
Sanger sequencing: H2rs253049200
Sanger sequencing: Gabra2-SEQ
Separated PCR: A A A Alternate2

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
When using the C57BL/6J mouse strain in a publication, please include JAX stock #000664 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

- AX4 (Standard)
- MP14 (Maximum)
- RB09 (Maximum)
- EM03 (Maximum)
- EM04 (Maximum)
- AX28 (Maximum)
- AX5 (Standard)
- RB17 (High)
- RB11 (Maximum)
- RB10 (Maximum)
- RB05 (Maximum)
- RB04 (Maximum)
- AX29 (Maximum)
- AX8 (Standard)
- MP15 (Standard)
- MP23 (Standard)
- EM02 (Maximum)
- EM01 (Maximum)
- RB16 (Maximum)
- RB13 (Maximum)
## Pricing & Availability

Readily available in any quantity needed.

### Live Mouse

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<th>AGE</th>
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## Volume Pricing Details

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<tr>
<td>200</td>
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### 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
Shipment: 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.

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Terms Of Use

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