

C57BL/6JStock No: **000664** | B6 **Inbred Strain**

Readily available in any quantity needed.

[PLACE ORDER](#)[Email](#)[Download PDF](#)[Help](#)**Also Known As: B6, B6/J**

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 - 90 weeks of age available for order.](#)

[R E A D M O R E +](#)**GENETIC OVERVIEW****Genetic Background****Generation**[Contact Technical Support](#)
(2018-07-27 00:00:00)[V I E W G E N E T I C S](#)

RESEARCH APPLICATIONS

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

[VIEW ALL RESEARCH APPLICATIONS](#)

BASE PRICE

Starting at:

\$21.41 Domestic price for male 3-week

[VIEW PRICE LIST](#)

Volume Pricing Available!

for select shipping destinations

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Important Note

This strain is homozygous for *Cdh23^{ahl}*, 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/6J 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/6J 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; 10) increased incidence of hydrocephalus and malocclusion and 11) spontaneous calcaneal luxation in 1% of aged males beginning at 6-8 months of age, resulting in ankylosing enthesopathy of that tarsal joint.

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 μm^2 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*^{Ahl} 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/6JEi, 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. The spontaneous *n-Tr20*^{m1J} C50T point mutation, which is also present in C57BL/6JEiJ but not C57BL/6NJ or C57BL/6ByJ, causes increased ribosomal pausing at AGA codons compared with that of other inbred strains (Ishimura et al., 2014). *n-Tr20* has been found to be restricted in expression to the nervous system and *n-Tr20*^{m1J} causes changes in synaptic transmission and raises the electroconvulsive seizure threshold, making C57BL/6J comparatively seizure resistant (Kapur et al., 2020). Additionally, an intronic point deletion in *Gabra2*, which arose sometime between the early 1970's and 1990's, results in decreased transcript and protein expression of this chloride channel component in the brain.

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).

+ Development

+ Selected References

- Genetics

+ *Ahr*^{b-1}

+ *Cdh23*^{Ahl}

+ *P2rx7*^{rs48804829-T}

+ *Glucos1*^{C57BL/6J}

+ *Glucos2*^{C57BL/6J}

+ *Glucos3*^{C57BL/6J}

+ *Nnt*^{C57BL/6J}

+ *Fbrwt1*^{C57BL/6J}

+ *Fbrwt2*^{C57BL/6J}

+ *Micr1ⁿ*

+ *n-TRtct5*^{m1J}

+ *Nlrp12*^{C57BL/6J}

+ *Apobec3*^{Rfv3-r}

+ *Cd5^b*

+ *Aanat*^{rs216509331-A}

+ *Mx1*^{s1}

+ *Cox7a2l*^s

+ *Gabra2*^{C57BL/6J}

– Disease/Phenotype

+ Disease Terms

+ Research Areas By Phenotype

+ Mammalian Phenotype Terms by Genotype

+ Phenotype Information

+ References

– Technical Support

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 B6 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 \(Maximum\)](#)
-  [RB16 \(Maximum\)](#)
-  [RB13 \(Maximum\)](#)
-  [RB08 \(Maximum\)](#)
-  [RB15 \(Maximum\)](#)
-  [RB12 \(Maximum\)](#)
-  [RB03 \(Maximum\)](#)
-  [RB06 \(Maximum\)](#)
-  [RB07 \(Maximum\)](#)
-  [AX8 \(Standard\)](#)
-  [MP15 \(Standard\)](#)
-  [AX18 \(Maximum\)](#)
-  [EM02 \(Maximum\)](#)
-  [EM01 \(Maximum\)](#)
-  [MP23 \(Standard\)](#)

-  [AX5 \(Standard\)](#)
-  [RB17 \(High\)](#)
-  [RB11 \(Maximum\)](#)
-  [RB10 \(Maximum\)](#)
-  [RB05 \(Maximum\)](#)
-  [RB04 \(Maximum\)](#)
-  [AX29 \(Maximum\)](#)

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Readily Available

Domestic **International**

Pricing effective for USA, Canada and Mexico shipping destinations

VIEW AGED (2 5 + WEEKS) MOUSE INFO

LIVE MOUSE

AGE	SEX	GENOTYPE	PRICE
3 weeks	Female	Not Applicable	\$23.63
	Male	Not Applicable	\$21.41
4 weeks	Female	Not Applicable	\$24.34
	Male	Not Applicable	\$22.26
5 weeks	Female	Not Applicable	\$26.08
	Male	Not Applicable	\$25.50
6 weeks	Female	Not Applicable	\$26.83
	Male	Not Applicable	\$26.22
7 weeks	Female	Not Applicable	\$28.36
	Male	Not Applicable	\$28.24
8 weeks	Female	Not Applicable	\$29.19
	Male	Not Applicable	\$29.08
9 weeks	Female	Not Applicable	\$29.49
	Male	Not Applicable	\$29.08
10 weeks	Female	Not Applicable	\$38.42
	Male	Not Applicable	\$38.05
11 weeks	Female	Not Applicable	\$40.61
	Male	Not Applicable	\$40.99

12 weeks	SEX	Not Applicable	\$41.77
	Male	Not Applicable	\$41.30
13 weeks	Female	Not Applicable	\$42.03
	Male	Not Applicable	\$46.31
14 weeks	Female	Not Applicable	\$43.48
	Male	Not Applicable	\$50.24
15 weeks	Female	Not Applicable	\$46.36
	Male	Not Applicable	\$55.88
16 weeks	Female	Not Applicable	\$49.48
	Male	Not Applicable	\$55.88
17 weeks	Female	Not Applicable	\$52.61
	Male	Not Applicable	\$59.27
18 weeks	Female	Not Applicable	\$55.62
	Male	Not Applicable	\$62.58
19 weeks	Female	Not Applicable	\$58.50
	Male	Not Applicable	\$65.86
20 weeks	Female	Not Applicable	\$61.52
	Male	Not Applicable	\$69.24
21 weeks	Female	Not Applicable	\$64.52
	Male	Not Applicable	\$72.70
22 weeks	Female	Not Applicable	\$67.76
	Male	Not Applicable	\$76.28
23 weeks	Female	Not Applicable	\$70.77
	Male	Not Applicable	\$83.12
24 weeks	Female	Not Applicable	\$73.76
	Male	Not Applicable	\$89.40

VOLUME PRICING DETAILS

QUANTITY	Volume Pricing
100	5% off
200	10% off

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](#).

RELATED PRODUCTS AND SERVICES

Timed Plug	Range of Gestational Days (E0-E10)	\$197.57
Timed Plug	Specific Gestational Day (E0-E10)	\$199.88
Timed Pregnant	Range of Gestational Days (E11-E15)	\$237.57
Timed Pregnant	Specific Gestational Day (E11-E15)	\$240.88

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

TERMS OF USE

[General Terms and Conditions](#)

Q U E S T I O N S A B O U T T E R M S O F U S E

LICENSING INFORMATION

 Related Strains

- All
- By Allele
- By Gene
- By Collection




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Yes No