D B A / 2 J

Stock No: 000671

Inbred Strain

READILY AVAILABLE

P L A C E O R D E R

Sized to accommodate orders of up to 100 or more. Ask Customer Service for details.

Overview

Also Known As: D2J, D2, DBA2

DBA/2J is a widely used inbred strain. Some characteristics include low susceptibility to developing atherosclerotic aortic lesions, high-frequency hearing loss, susceptibility to audiogenic seizures, development of progressive eye abnormalities that closely mimic

human hereditary glaucoma, and extreme intolerance to alcohol and morphine.

READ MORE +

GENETIC OVERVIEW

Genetic Background

Generation

Contact Technical Support
(2018-07-27 00:00:00)

VIEW GENETICS

RESEARCH APPLICATIONS

Cardiovascular Research
Neurobiology Research
Sensorineural Research
Research Tools
Immunology, Inflammation and Autoimmunity Research
Dermatology Research
Mouse/Human Gene Homologs
Developmental Biology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

$30.01 Domestic price for male 3-week

VIEW PRICE LIST

Volume Pricing Available!
for select shipping destinations
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Details

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 that is already severe by three months of age.

Detailed Description

DBA/2J is a widely used inbred strain that is valuable in a large number of research areas, including cardiovascular biology, neurobiology, and sensorineural research. Its characteristics are often contrasted with those of the C57BL/6J inbred strain (Stock

No. 000664). DBA/2J mice show a low susceptibility to developing atherosclerotic aortic lesions (20 to 350 um2 atherosclerotic aortic lesions /aortic cross-section) following 14 weeks on an atherogenic diet (1.25% cholesterol, 0.5% cholic acid and 15% fat). They also exhibit high-frequency hearing loss beginning roughly at the time of weaning/adolescence (between three to four weeks of age) and becoming severe by two to three months of age. The age related hearing loss 8 mutation arose spontaneously in DBA/2J between 1951 and 1975. This strain possesses three recessive alleles that cause progressive cochlear pathology initially affecting the organ of Corti. Decreasing anteroventral cochlear nucleus volume decreases and neuron loss parallel the progression of peripheral hearing loss. Young DBA/2J inbred mice are also susceptible to audiogenic seizures due to the *asp2* mutation, however, this susceptibility decreases as animals reach adulthood. There is high incidence of calcareous pericarditis, and calcified lesions of the testes, tongue and skeletal muscle. This strain is among the least responsive to phytohemagglutinin (Heiniger et al., 1975), but highly sensitive to haloperidol (Kanes et al, 1993).

Aging DBA/2J mice develop progressive eye abnormalities that closely mimic human hereditary glaucoma. Defects include iris pigment dispersion, iris atrophy, anterior synechia (adhesion of the iris to the cornea), and elevated intraocularpressure (IOP). The onset of disease symptoms begins between three and four months of age with 56% of females and 15% of males showing signs of iris pigment epithelium loss and transillumination of the peripheral iris. By six to seven months of age, all mice demonstrate significant widespread transillumination and thickening of the iris border. Elevation of IOP is evident in some females by six months of age. By nine months of age, both sexes exhibit elevated IOP, with pressures higher in females (mean: 20.3 +/-79; 1.8 mmHg) compared to males (mean: 16.2 +/-79; 1.4 mmHg). Retinal histopathology reveals retinal ganglion cell, as well as GABAergic and cholinergic amacrine cell, loss. (Moon JI *et al*. 2005). Two alleles contribute to the eye phenotype, *Gpnmb*^{R150X} and *Tyrp1*^{isa}; both are present in DBA/2J mice.

DBA/2J mice also show an extreme intolerance to alcohol and morphine.
In 2002, Vance *et al*. reported that NK cells in DBA/2J exhibit the unique characteristic that they lack surface expression of CD94/NKG2A receptors. CD94/NKG2 receptors are normally expressed on the surface of most fetal NK cells. Expression of CD94/NKG2 is thought to play a role in self tolerance and the ability of NK cells to distinguish between MHC I^{low} and MHC I^{high} target cells. CD94 is the product of the mouse *Klrd1* locus, on mouse Chromosome 6. A subsequent publication by Wilhelm and coworkers identified a deletion in the 3' end of the *Klrd1* gene of DBA/2J mice. This ~2.4 kb deletion does not prevent transcription of the gene, but prevents translation and cell surface expression of the CD94 protein. Analysis of DNA samples held at The Jackson Laboratory (unpublished results) confirmed the presence of the deletion of *Klrd1* in the DBA/2J strain. The deletion, which occurred sometime between 1984 and 1989, is homozygous within our colonies, making DBA/2J mice naturally CD94 deficient.

Development

Selected References

Genetics

Fscn2^{ahl8}

Gpr84^{del}

P2rx7^{P451L}

Tyrp1^{isa}

a

Hc^{0}

Fbrwt2$^{DBA/2J}$

- *Fbrwt1*$^{DBA/2J}$
- *Cdh23*^{ahl}
- *Mx1*^{s1}
- *Ahr*^{d}
- *Asp2*
- *Gpnmb*^{R150X}
- *Cd5*^{a}
- *Klrd1*$^{DBA/2J}$
- *Cox7a2l*^{l}
- *Taar1*^{m1J}
- *Myo5a*^{d}

Disease/Phenotype

- Disease Terms
- Research Areas By Genotype
- Mammalian Phenotype Terms by Genotype
- Phenotype Information
- References

Technical Support

CHAT OFFLINE

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Sanger sequencing:Taar1 rs33645709-SEQ

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 a good breeder.

Additional Breeding and Husbandry Support

Mating System

Sibling x Sibling

Appearance

dilute brown

Related Genotype: *a/a Tyrp1^{b}/Tyrp1^{b} Myo5a^{d}/Myo5a^{d}*

Citation

Animal Health Reports

When using the DBA/2J mouse strain in a publication, please include JAX stock #000671 in your Materials and Methods section.

Facility Barrier Level Descriptions

- RB09 (Maximum)
- RB11 (Maximum)
- EM03 (Maximum)
- MP14 (Maximum)
- AX29 (Maximum)

Pricing & Availability

Readily Available

Sized to accommodate orders of up to 100 or more. Ask Customer Service for details.

Domestic | International

Pricing effective for USA, Canada and Mexico shipping destinations

Live Mouse

AGE	SEX	GENOTYPE	PRICE
3 weeks	Female	Not Applicable	$33.25
	Male	Not Applicable	$30.01
4 weeks	Female	Not Applicable	$33.25
	Male	Not Applicable	$30.01
5 weeks	Female	Not Applicable	$34.70
	Male	Not Applicable	$31.92
6 weeks	Female	Not Applicable	$36.74
	Male	Not Applicable	$34.15
7 weeks	Female	Not Applicable	$40.42
	Male	Not Applicable	$40.24
8 weeks	Female	Not Applicable	$41.20
	Male	Not Applicable	$40.24
9 weeks	Female	Not Applicable	$42.99
	Male	Not Applicable	$41.99

10 weeks	SEX	Not Applicable	$46.98
		Not Applicable	$48.98
11 weeks	Female	Not Applicable	$46.98
	Male	Not Applicable	$48.98
12 weeks	Female	Not Applicable	$46.98
	Male	Not Applicable	$48.98
16 weeks	Female	Not Applicable	$54.96
	Male	Not Applicable	$62.96
17 weeks	Female	Not Applicable	$54.96
	Male	Not Applicable	$62.96
18 weeks	Female	Not Applicable	$54.96
	Male	Not Applicable	$62.96
19 weeks	Female	Not Applicable	$58.95
	Male	Not Applicable	$69.95
20 weeks	Female	Not Applicable	$58.95
	Male	Not Applicable	$69.95

Volume Pricing Details

QUANTITY	VOLUME PRICING
100	5% 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

Mouse ES Cells	DBA/2J AC203/GrsrJ mES cells	$995.00
Mouse ES Cells	DBA/2J AC173/GrsrJ mES Cells	$995.00

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All

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