


C57BR/cdJ
Stock No: **000667**
 **Inbred Strain**

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posterior horn and lateral/anterior columns. Mice of this strain show several behavioral differences from many other inbred strains.

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GENETIC OVERVIEW

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\$2,854.50 Domestic price Cryo Recovery

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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.

Detailed Description

C57BR/cdJ mice develop early-onset hearing loss that is moderate at seven weeks of age, is severe by 20 weeks and progresses with increasing age (Henry 1982; Zheng *et al.* 1999). The loss is greatest in the higher frequency range; at seven weeks, Henry reported 50% of the mice showed no 64 kHz auditory brainstem response (ABR), and by 100 days both the 2 kHz and 32 kHz responses were absent. Both labs found this strain to be least vulnerable to loss of the 16 kHz response, which persisted through 200 days but was lost before 300 days of age (Henry 1982). C57BR/cdJ did not exhibit aberrant ABR wave patterns, suggesting that the hearing loss results from defects of the peripheral, rather than central auditory system (Zheng *et al.* 1999). F1 hybrid progeny from matings with the good-hearing strain CAST/Ei exhibited good hearing even at advanced ages, indicating that the allele(s) responsible for hearing loss in C57BR/cdJ are recessive. An allelism test between C57BR/cdJ and NOD.NON-*H2*^{nb1} showed the mutations responsible for hearing loss in these two strains not to be allelic; NOD.NON-*H2*^{nb1} shares the deafness allele(s) of A/J, ALR/LtJ and DBA/2J (Zheng *et al.* 1999).

C57BR/cdJ mice showed variable incidence of spinal cord epidermoid cysts, primarily in the leptomeninges adjacent to the posterior horn and lateral/anterior columns. The cysts comprised "a whorled mass of keratinized cells surrounded by polygonal epithelial cells," some of which contained keratohyaline granules. No basal cells were present. (Stroop 1884).

EEG studies demonstrated that although C57BR/cd mice spend less time sleeping, a greater proportion of their sleep time is spent in paradoxical sleep (PS)(equivalent to human rapid eye movement, or REM sleep) than is true of mice of six other inbred strains tested (Pagel *et al.* 1973). Whereas C57BL/6 mice learn slowly, gradually improving their performance at a rate dependent upon the number of training trials, C57BR/cd mice fail to improve during the initial training, but show improvement after a delay of at least eight to 10 hours; overall, C57BR/cd mice are fast learners. PS deprivation has no effect on either discriminatory or active avoidance learning in C57BL/6, BALB/c or SEC mice. In contrast, PS deprivation for 24 hours impairs learning of discriminatory tasks by C57BR/cd mice, and six hours' PS deprivation immediately following the initial training abolishes their time-dependent improvement in avoidance learning. Continuous PS deprivation causes C57BR/cd mice to learn at the same rate as C57BL/6 mice. Interestingly, although BALB/c mice show a time-delayed improvement in learning acquisition for an appetitive task similar to that of C57BR/cd mice for avoidance learning, neither C57BR/cd nor C57BL/6 exhibit show such time-dependent improvement in appetitive learning (Kitahama *et al.* 1981 and references cited therein).

Development

Control Suggestions

Selected References

Genetics

Rmcf[®]

Cdh23^{ahl}

[+ *Ahr^{b-1}*](#)

[+ *Cox7a2^l*](#)

[- Disease/Phenotype](#)

[+ Disease Terms](#)

[+ Research Areas By Phenotype](#)

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[+ Phenotype Information](#)

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C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

[Genotyping resources and troubleshooting](#)

Breeding Considerations

This inbred strain is maintained by sibling mating.

[Additional Breeding and Husbandry Support](#)

Mating System

Sibling x Sibling

Appearance

brown

Related Genotype: *a/a Tyrp1^b / Tyrp1^b*

Citation

When using the C57BR/cdJ mouse strain in a publication, please include JAX stock #000667 in your Materials and Methods section.

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