B6;SJL-*Slc6a3* $^{tm1.1(cre)Bkmn}$/J

Stock No: **006302**

Targeted Mutation

Please contact Technical Support for more information

VIEW REPLACEMENT

be useful in neurobiological studies to facilitate the analysis of gene function in dopaminergic neurons, such as drug addiction or Parkinson's disease.

This strain is discontinued. Please refer to B6.SJL-*Slc6a3*$^{tm1.1(cre)Bkmn}$/J Stock No. 006660.

Donating Investigator

Cristina M Backman, National Institute on Drug Abuse (NIH)

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GENETIC OVERVIEW

Genetic Background	Generation

Slc6a3$^{tm1.1(cre)Bkmn}$

Allele Type	Gene Symbol	Gene Name
Targeted (Recombinase-expressing)	*Slc6a3*	solute carrier family 6 (neurotransmitter transporter, dopamine), member 3

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research
Research Tools
Cell Biology Research

VIEW ALL RESEARCH APPLICATIO

Details

Detailed Description

Mice homozygous for this dopamine transporter IRES-cre (DAT^{IREScre} or DAT-cre) mutant allele are viable and fertile. Cre recombinase activity is observed as early as embryonic day 15, and co-localizes with endogenous gene expression in adult dopaminergic cell groups (substantia nigra (SN) and ventral tegmental area (VTA), as well as in the retrorubral field). Lower Cre recombinase activity is detected in adult olfactory bulb glomeruli, mimicking the known lower *Slc6a3* (or DAT) expression in this tissue. Although the pattern and intensity of DAT immunostaining in the SN, VTA and striatum do not differ between wildtype and mutant mice, striatum DAT protein levels are moderately reduced (17%) in heterozygotes and significantly reduced (47%) in homozygotes. This decrease in DAT protein levels in homozygous mutant striatum is associated with significantly increased neuropeptide PDyn (but not D1, D2, or PPE) mRNA levels compared to wildtype. Increases in these mRNA levels are not observed in heterozygotes. When these mice are bred with mice containing a *loxP*-flanked ("floxed") sequence of interest, *cre*-mediated recombination will result in deletion of the flanked genome in dopaminergic neurons in the *cre*-positive, homozygous floxed offspring. These mutant mice may facilitate gene function analysis in dopaminergic neurons in neurological studies of, for example, drug addiction or Parkinson's disease.

Expression Data

Control Suggestions

Selected References

Genetics

Slc6a3$^{tm1.1(cre)Bkmn}$

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Separated PCR:Slc6a3
Standard PCR:Slc6a3
Separated PCR:Slc6a3
Genotyping resources and troubleshooting

Breeding Considerations

When maintaining a live colony, heterozygous mice are bred to wildtype siblings or to B6SJLF1/J (Stock No. 100012) F1 hybrids. Homozygous mutant mice are fertile.

Additional Breeding and Husbandry Support

Mating System

+/+ sibling x Heterozygote

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QUESTIONS ABOUT TERMS OF USE

ADDITIONAL USE RESTRICTIONS APPLY

Use of MICE only available to non-profit entities.

LICENSING INFORMATION

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

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All

By Allele

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