The Jackson Laboratory

B6.Cg-*Pvalb* $^{tm5.1(cre/folA)Hze}$/J

Stock No: **022863** | Pvalb-T2A-dCre-D , Pvalb-2A-dCre-D

Congenic, Targeted Mutation

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

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expressing cells by the endogenous promoter/enhancer elements of the parvalbumin locus. When induced, Cre recombinase activity is observed in scattered cells throughout the cortex, as well as restricted populations in the cerebellum, medulla, pons, pallidum, and thalamus.

Donating Investigator

Hongkui Zeng, Allen Institute for Brain Science

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GENETIC OVERVIEW

Genetic Background	Generation

Pvalb$^{tm5.1(cre/folA)Hze}$

Allele Type	Gene Symbol	Gene Name
Targeted (Recombinase-expressing, Inducible)	*Pvalb*	parvalbumin

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools
Neurobiology Research
Cancer Research

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BASE PRICE

Starting at:

$2,854.50 Domestic price Cryo Recovery

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Details

Detailed Description

The Pvalb-T2A-dCre-D targeted mutation (also called Pvalb-2A-dCre-D, Pvalb-2A-dCre-Δ or Pvalb-2A-dCre-Δhygro) has a viral 2A oligopeptide (T2A) that mediates ribosomal skipping and a destabilized Cre fusion gene (dCre) inserted in-frame at the 3' end of the parvalbumin (*Pvalb*) coding region. This is designed to have both endogenous gene and dCre expression directed to *Pvalb*-expressing cells by the endogenous promoter/enhancer elements.

The ecDHFR$^{R12Y/Y100I}$ domain of dCre leads to proteosomal degradation of the entire fusion protein, resulting in little or no Cre recombinase activity. Administration of the DHFR inhibitor, trimethoprim (TMP), prevents degradation of the dCre fusion gene and results in Cre recombinase activity.

When Pvalb-T2A-dCre-D mice are bred with mice containing *loxP*-flanked sequences, TMP-stabilized Cre recombination will result in deletion of floxed sequences in the *Pvalb*-expressing cells of the double mutant offspring.

Specifically, the donating investigator reports that Pvalb-T2A-dCre-D mice have trimethoprim-inducible Cre recombinase expression (*in situ* hybridization) that is specific and efficient in scattered cells throughout the cortex, as well as restricted populations in the cerebellum, medulla, pons, pallidum, and thalamus.

In the absence of trimethoprim, these same regions exhibit significantly reduced Cre recombinase activity (highest expression in particular cells of the cerebellum and in the thalamic reticular nucleus). Heterozygous mice are viable and fertile with no gross physical or behavioral abnormalities. The donating investigator did not examine dCre activity in tissues other than brain, and did not attempt to generate homozygous mice to date (July 2013).

For characterization information, see images at the Allen Institute for Brain Science website (Pvalb-T2A-dCre images).

The dCre fusion gene (also called destabilized Cre, hDHFR/Cre or ecDHFR$^{R12Y/Y100I}$/Cre) is Cre recombinase fused at its N terminus to the first 159 amino acids of the Escherichia coli K-12 strain chromosomal dihydrofolate reductase gene (DHFR or folA) harboring the G67S mutation and modified to also include the R12Y/Y100I destabilizing domain mutations. The ecDHFR$^{R12Y/Y100I}$ domain of dCre leads to proteosomal degradation of the entire fusion protein, resulting in little or no Cre recombinase activity. The donating investigator reports that administration of the high affinity DHFR inhibitor trimethoprim (TMP; at a concentration of 0.25-0.30 mg/g body weight) prevents degradation of the dCre fusion gene, resulting in Cre recombinase activity.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Pvalb$^{tm5.1(cre/folA)Hze}$

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Standard PCR:Pvalb
Genotyping resources and troubleshooting

Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred to wildtype mice from the colony or to C57BL/6J inbred mice (Stock No. 000664). The phenotype of homozygous mice has not yet been determined (July 2013).

Additional Breeding and Husbandry Support

Citation

When using the Pvalb-T2A-dCre-D , Pvalb-2A-dCre-D mouse strain in a publication, please cite the originating article(s) and include JAX stock #022863 in your Materials and Methods section.

Animal Health Reports

Facility Barrier Level Descriptions

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Cryo Recovery

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

Domestic **Internatio**

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC NOT-FOR-PROFIT & ACADEMIC PRICING		
SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous or Wildtype for Pvalb<tm5.1(cre/folA)Hze>	$2,854.50

RELATED PRODUCTS AND SERVICES		
Frozen Mouse Embryo	B6.Cg-Pvalb<tm5.1(cre/folA)Hze>/J Frozen Embryo	$2595.00

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