

FVB/N-Tg(Myh6*/tetO-Slc8a1)BJych/Mmjax

MMRRC Stock No: **41578-JAX** | NCX1 Tg

 [Coisogenic](#), [Transgenic](#)

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These inducible NCX1 transgenic mice express rat *Slc8a1* (or NCX1) under the direction of a cardiomyocyte-specific promoter (*Myh6*) fused with *tetO*. Following DOX induction, bitransgenic mice exhibit a 42% increase in SLC8A1 current amplitude and prolonged action potential duration. This strain may be useful for studying heart disease.

Donating Investigator

Joseph Y. Cheung, Temple University, School of Medicine

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GENETIC OVERVIEW

Genetic Background

Generation

Tg(Myh6*/tetO-Slc8a1)BJych

Alele Type

Transgenic (Inducible, Inserted expressed sequence)

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools

VIEW ALL RESEARCH APPLICATIONS

Details

Detailed Description

These inducible NCX1 transgenic mice express rat *Slc8a1* (solute carrier family 8 (sodium/calcium exchanger), member 1 or NCX1) under the direction of a modified mouse α -myosin heavy chain minimal promoter (*Myh6*) fused with a tetracycline operator promoter (*tetO*). SLC8A1 is a $\text{Na}^+/\text{Ca}^{2+}$ -exchanger that mediates Ca^{2+} efflux and influx during the excitation-contraction cycle in cardiac muscle.

Mice hemizygous for the transgenic insert are viable and fertile. It is not known if homozygotes are viable.

When mated to mice carrying MHC-tTA (also known as Tg(Myh6-tTA)55Rbns), SLC8A1 expression is directed to cardiac myocytes and regulated with tetracycline or its analog doxycycline (DOX). Following DOX induction, bitransgenic mice exhibit a 42% increase in SLC8A1 current amplitude and action potential duration is prolonged. This strain may be useful for studying heart disease.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Tg(Myh6*/tetO-Slc8a1)BJych

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

[← Technical Support](#)

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

Standard PCR: [Tg\(Myh6*/tetO-Slc8a1\)BJych](#)
[Genotyping resources and troubleshooting](#)

Breeding Considerations

While maintaining a live colony, these mice are bred as hemizygotes. The donating investigator has not attempted to generate homozygous mice.

[Additional Breeding and Husbandry Support](#)

Citation

When using the NCX1 Tg mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #41578 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](#)

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