

# TRM: MLC2V-Cre Mice

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## BACKGROUND

Ventricular myosin light chain 2, encoded by the *MyI2* gene, is essential in vertebrate smooth muscle contraction and has a regulatory role in striated slow twitch muscle contraction. Mutations in this gene have been associated with hypertrophic cardiomyopathy.

This strain expresses Cre recombinase from the endogenous *MyI2* locus. Cre recombinase activity is detected in cardiac ventricular muscle starting at day E8.75. *MyI2* expression initiates at E7.5 in the ventricular cardiac primordia. Heterozygous knock-in/knock-out mice are viable and fertile. Mice that are homozygous for the knock-in mutation have an embryonic lethal phenotype, dying at approximately E12.5.

## TECHNOLOGY DESCRIPTION

The *Mlc2v-cre* knock-in/knock-out allele has a Cre recombinase gene which replaced part of exon 1 and all of exon 2 of the *MyI2* gene; both abolishing endogenous *MyI2* gene function and placing *cre* expression under the control of the endogenous *MyI2* promoter/enhancer elements. Cre recombinase expression is directed at the cardiac ventricular muscle starting at approximately E8.

## APPLICATIONS

These mice may be useful for Cre-lox studies of cardiogenesis.

## STATE OF DEVELOPMENT

The mice are designated Tangible Research Material (TRM). A complete description, including genotyping, phenotyping, etc is found at The Jackson Lab cat. No. 029465 <https://www.jax.org/strain/029465>

## INTELLECTUAL PROPERTY INFO

Academic and non-profit institutions please order directly from The Jackson Laboratory. Commercial entities require a license from UC San Diego contact ( <https://innovation.ucsd.edu/contact/>).

## RELATED MATERIALS

- Chen J, Kubalak SW, Minamisawa S, Price RL, Becker KD, Hickey R, Ross J Jr,Chien KR. Selective requirement of myosin light chain 2v in embryonic heart function. J Biol Chem. 1998 Jan 9;273(2):1252-6 - 01/09/1999

## CONTACT

University of California, San Diego  
Office of Innovation and Commercialization  
[innovation@ucsd.edu](mailto:innovation@ucsd.edu)  
tel: 858.534.5815.



## INVENTORS

- Chien, Kenneth R.

## OTHER INFORMATION

### KEYWORDS

Hypertrophic cardiomyopathy, smooth muscle, muscle contraction, MyI2 gene, myosin light chain 2, murine cardiogenesis

### CATEGORIZED AS

- [Research Tools](#)
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### RELATED CASES

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