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TRM: MLC2V-Cre Mice

Tech ID: 21941 / UC Case 1999-071-0

BACKGROUND

Request Information

Ventricular myosin light chain 2, encoded by the *Myl2* 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 *Myl2* locus. Cre recombinase activity is detected in cardiac ventricular muscle starting at day E8.75. *Myl2* 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 *Myl2* gene; both abolishing endogenous *Myl2* gene function and placing *cre* expression under the control of the endogenous *Myl2* 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

University of California, San Diego Office of Innovation and Commercialization 9500 Gilman Drive, MC 0910, , La Jolla,CA 92093-0910 Tel: 858.534.5815 innovation@ucsd.edu https://innovation.ucsd.edu Fax: 858.534.7345

CONTACT

University of California, San Diego Office of Innovation and Commercialization innovation@ucsd.edu tel: 858.534.5815.



INVENTORS

Chien, Kenneth R.

OTHER INFORMATION

KEYWORDS Hypertrophic cardiomyopathy, smooth muscle, muscle contraction, Myl2 gene, myosin light chain 2, murine cardiogenesis

CATEGORIZED AS

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