

Myh7b Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Myh7b

Project type

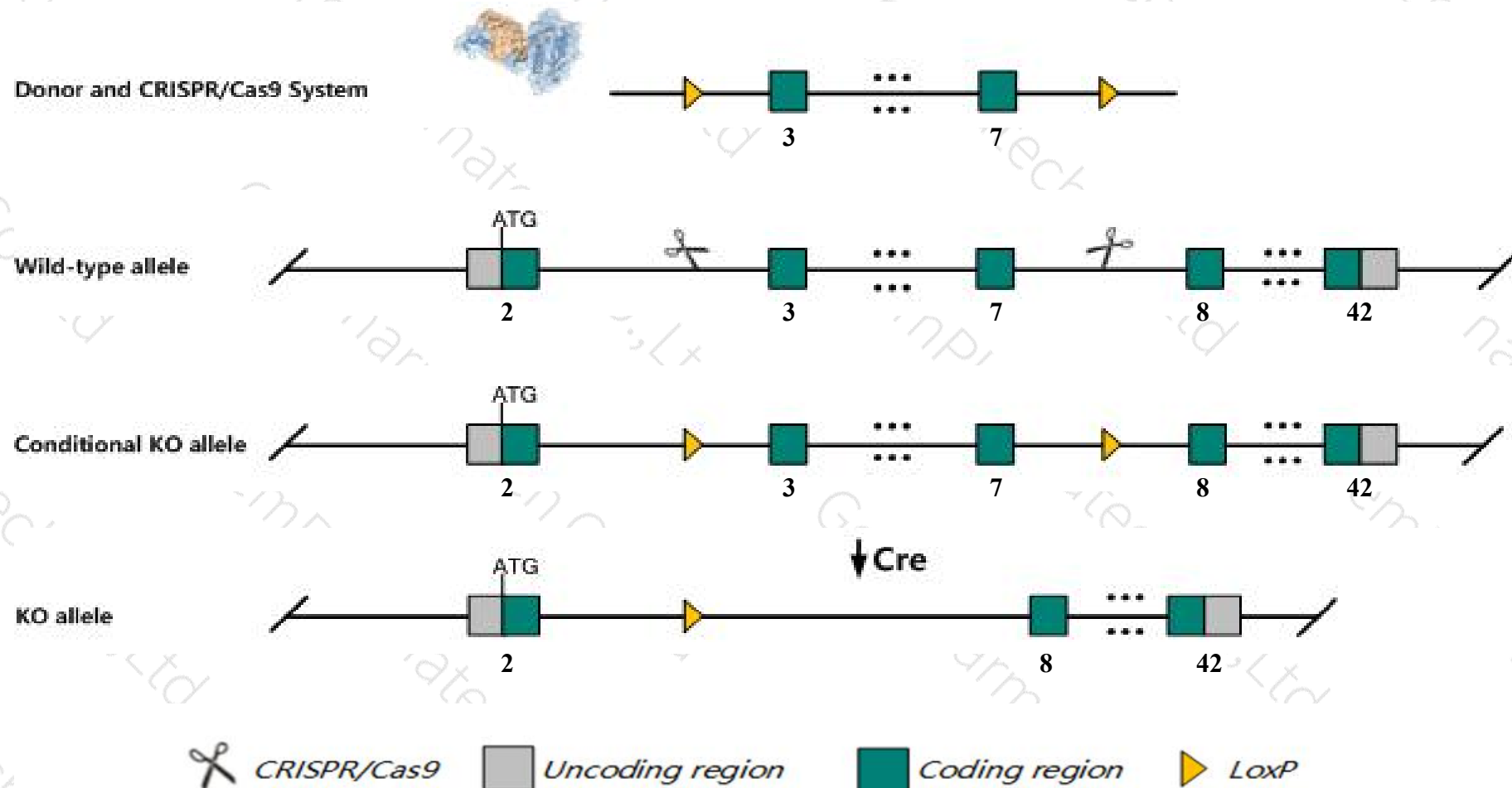
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myh7b* gene. The schematic diagram is as follows:



Technical routes

- The *Myh7b* gene has 3 transcripts. According to the structure of *Myh7b* gene, exon3-exon7 of *Myh7b-201* (ENSMUST00000092995.5) transcript is recommended as the knockout region. The region contains 533bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myh7b* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Myh7b* gene is located on the Chr2. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Myh7b myosin, heavy chain 7B, cardiac muscle, beta [Mus musculus (house mouse)]

Gene ID: 668940, updated on 31-Jan-2019

Summary



Official Symbol Myh7b provided by [MGI](#)

Official Full Name myosin, heavy chain 7B, cardiac muscle, beta provided by [MGI](#)

Primary source [MGI:MGI:3710243](#)

See related [Ensembl:ENSMUSG00000074652](#)

Gene type protein coding

RefSeq status REVIEWED

Organism [Mus musculus](#)

Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus

Also known as Myh14

Summary This gene encodes a myosin heavy chain. The encoded protein forms a hexamer comprised of two heavy chains, two alkali light chains, and two regulatory light chain components. This complex functions in muscle contraction. [provided by RefSeq, Jun 2013]

Expression Biased expression in heart adult (RPKM 6.9), limb E14.5 (RPKM 3.6) and 8 other tissues [See more](#)

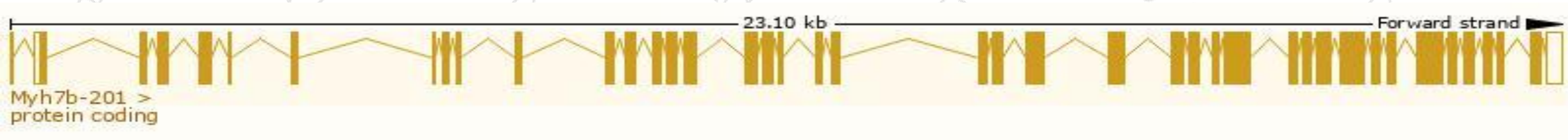
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

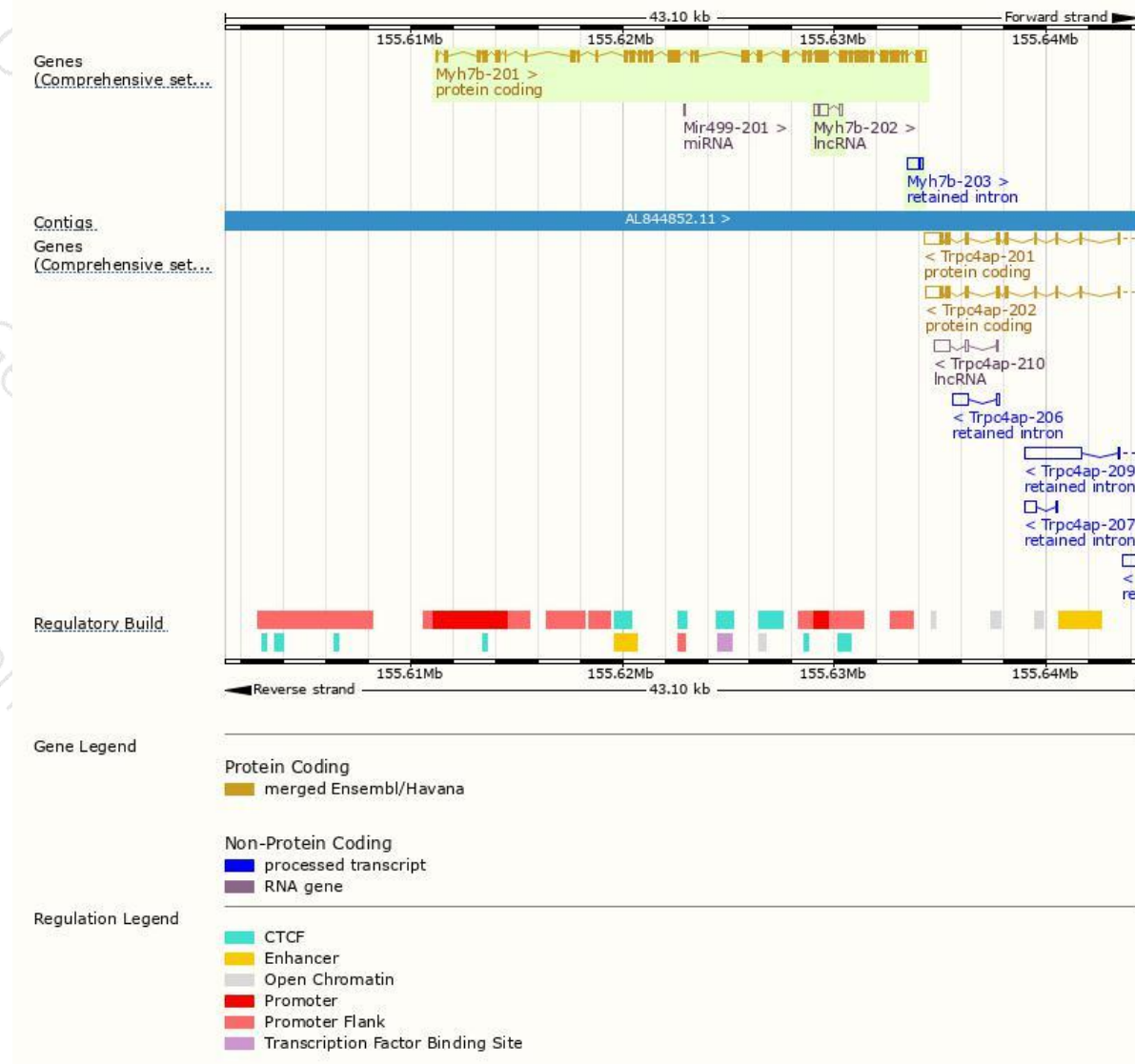
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myh7b-201	ENSMUST00000092995.5	6163	1941aa	Protein coding	CCDS50768	A2AQP0	TSL:5 GENCODE basic APPRIS P1
Myh7b-203	ENSMUST00000154656.1	674	No protein	Retained intron	-	-	TSL:2
Myh7b-202	ENSMUST00000124415.1	667	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Myh7b-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.

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