

Myom2 Cas9-CKO Strategy

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Project Overview

Project Name

Myom2

Project type

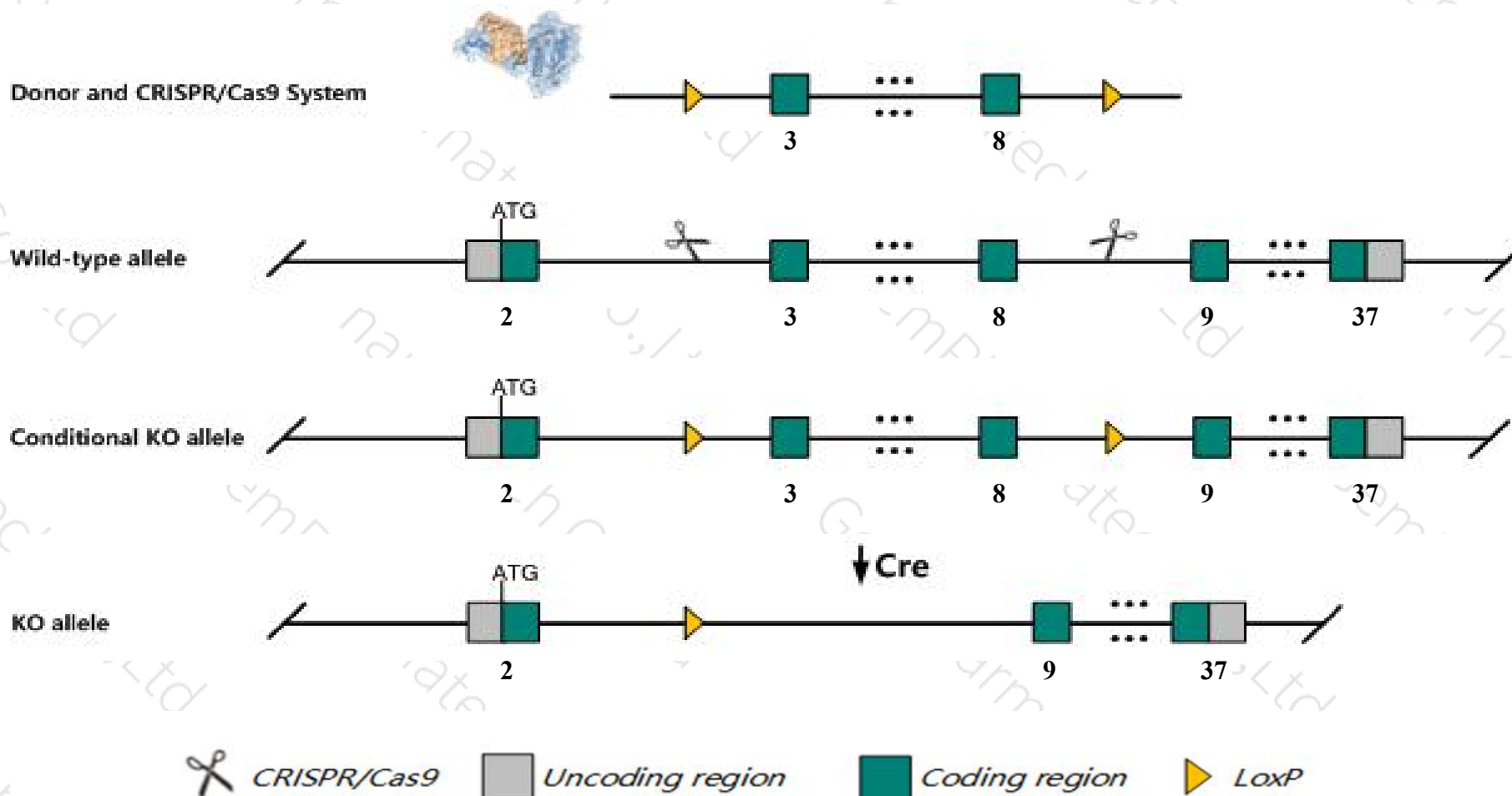
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myom2* gene. The schematic diagram is as follows:



- The *Myom2* gene has 5 transcripts. According to the structure of *Myom2* gene, exon3-exon8 of *Myom2-201* (ENSMUST00000033842.3) transcript is recommended as the knockout region. The region contains 686bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myom2* 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 *Myom2* gene is located on the Chr8. 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)

Myom2 myomesin 2 [*Mus musculus* (house mouse)]

Gene ID: 17930, updated on 13-Mar-2020

Summary

Official Symbol	Myom2 provided by MGI
Official Full Name	myomesin 2 provided by MGI
Primary source	MGI:MGI:1328358
See related	Ensembl:ENSMUSG00000031461
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW146149
Expression	Biased expression in heart adult (RPKM 109.4), mammary gland adult (RPKM 11.0) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

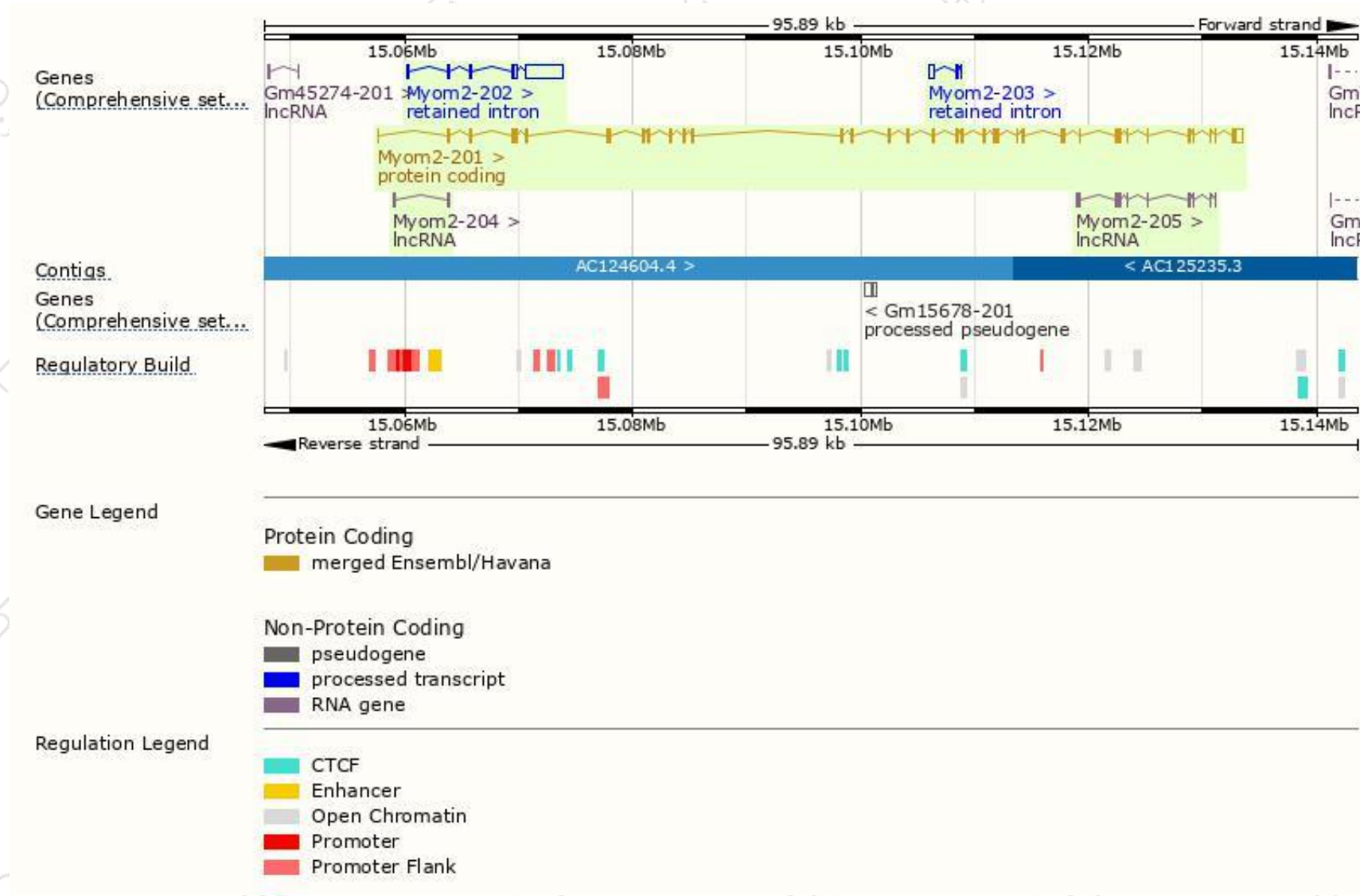
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myom2-201	ENSMUST00000033842.3	5075	1463aa	Protein coding	CCDS22123	Q14BI5	TSL:1 GENCODE basic APPRIS P1
Myom2-205	ENSMUST00000140033.1	744	No protein	Processed transcript	-	-	TSL:3
Myom2-204	ENSMUST00000135908.1	262	No protein	Processed transcript	-	-	TSL:5
Myom2-202	ENSMUST00000131251.1	3973	No protein	Retained intron	-	-	TSL:2
Myom2-203	ENSMUST00000135393.1	645	No protein	Retained intron	-	-	TSL:3

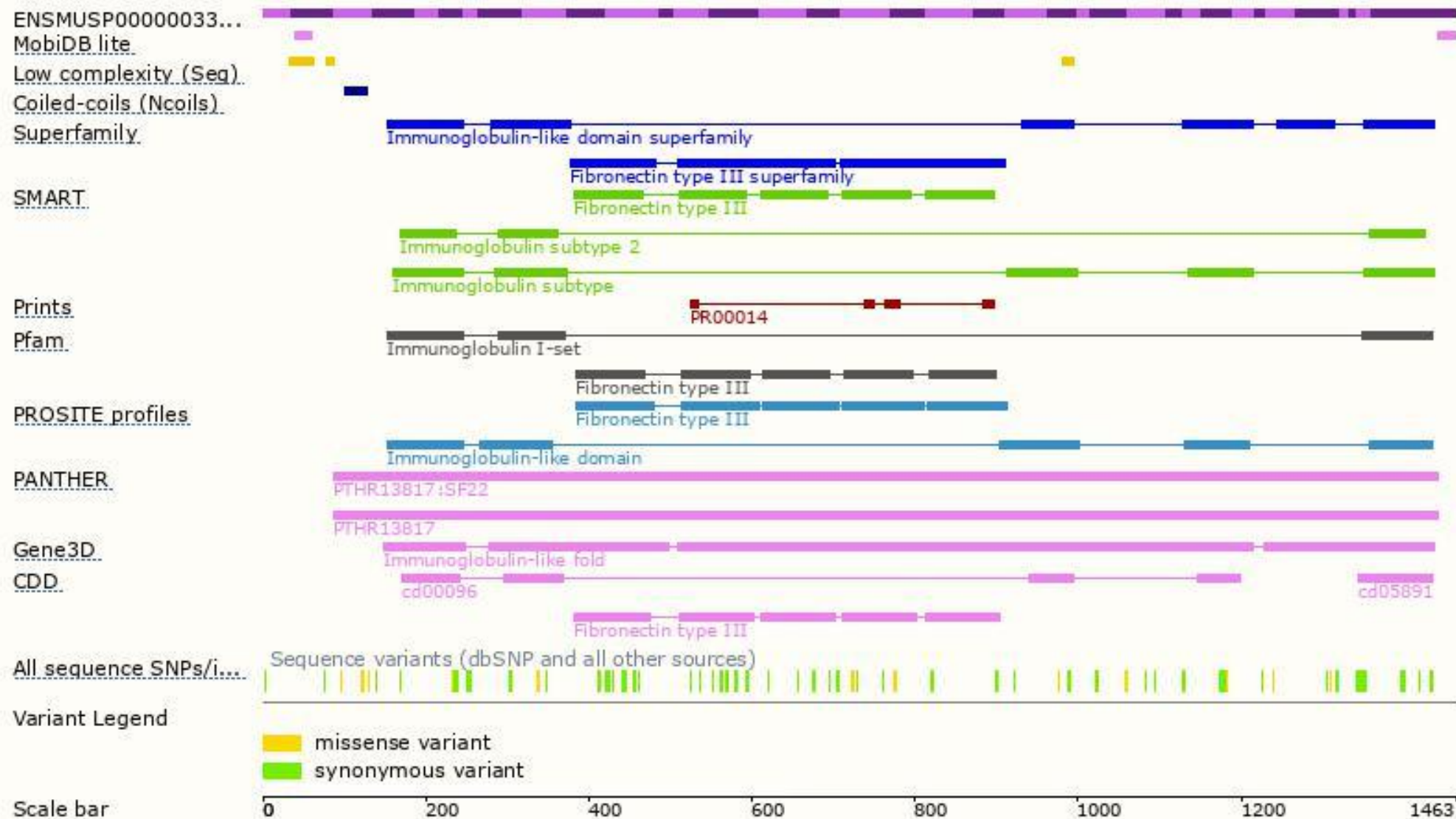
The strategy is based on the design of *Myom2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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