

Myot Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Myot

Project type

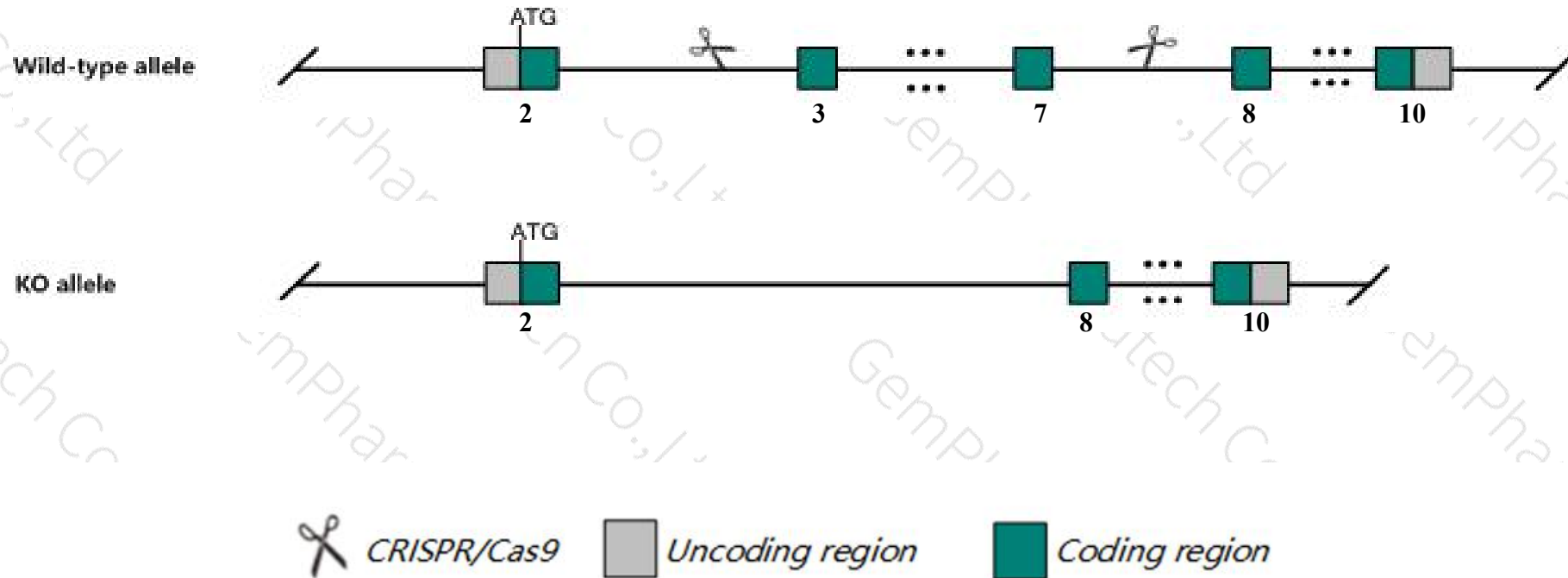
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Myot* gene has 2 transcripts. According to the structure of *Myot* gene, exon3-exon7 of *Myot-201* (ENSMUST00000025349.11) transcript is recommended as the knockout region. The region contains 665bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myot* gene. The brief process is as follows: CRISPR/Cas9 system were

- According to the existing MGI data, mice homozygous for a null allele are viable and fertile with normal skeletal and cardiac muscle morphology and function, growth rate, survival, and internal organ morphology.
- The *Myot* gene is located on the Chr18. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Myot myotilin [*Mus musculus* (house mouse)]

Gene ID: 58916, updated on 12-Aug-2019

Summary

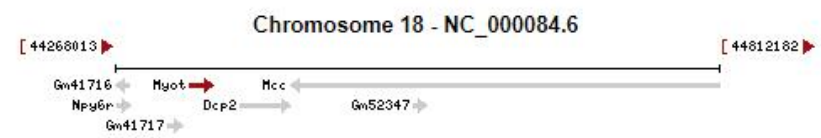
- Official Symbol Myot provided by MGI
- Official Full Name myotilin provided by MGI
- Primary source MGI:MGI:1889800
- See related Ensembl:ENSMUSG00000024471
- Gene type protein coding
- RefSeq status VALIDATED
- Organism *Mus musculus*
- Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
- Also known as Ttid; 5530402I04Rik
- Expression Biased expression in mammary gland adult (RPKM 26.3), heart adult (RPKM 5.5) and 4 other tissues [See more](#)
- Orthologs [human](#) [all](#)

Genomic context

Location: 18; 18 B3 [See Myot in Genome Data Viewer](#)

Exon count: 10

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	18	NC_000084.6 (44334053..44355740)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	18	NC_000084.5 (44493728..44515376)

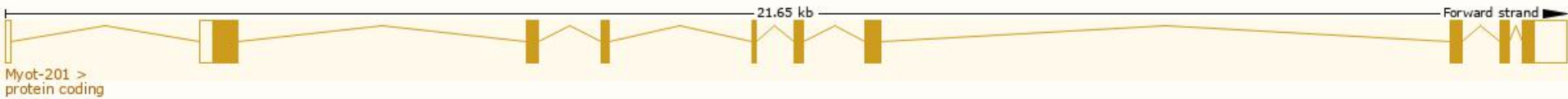


Transcript information (Ensembl)

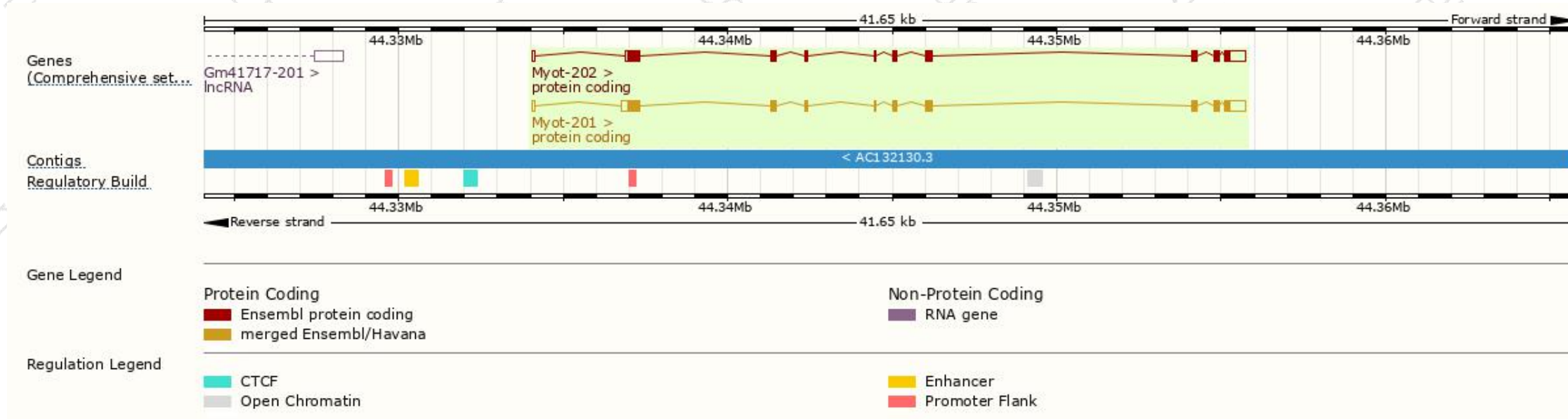
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myot-201	ENSMUST00000025349.11	2209	496aa	Protein coding	CCDS29228	A0A509 Q9JIF9	TSL:1 GENCODE basic APPRIS P1
Myot-202	ENSMUST00000115498.1	2087	496aa	Protein coding	CCDS29228	A0A509 Q9JIF9	TSL:5 GENCODE basic APPRIS P1

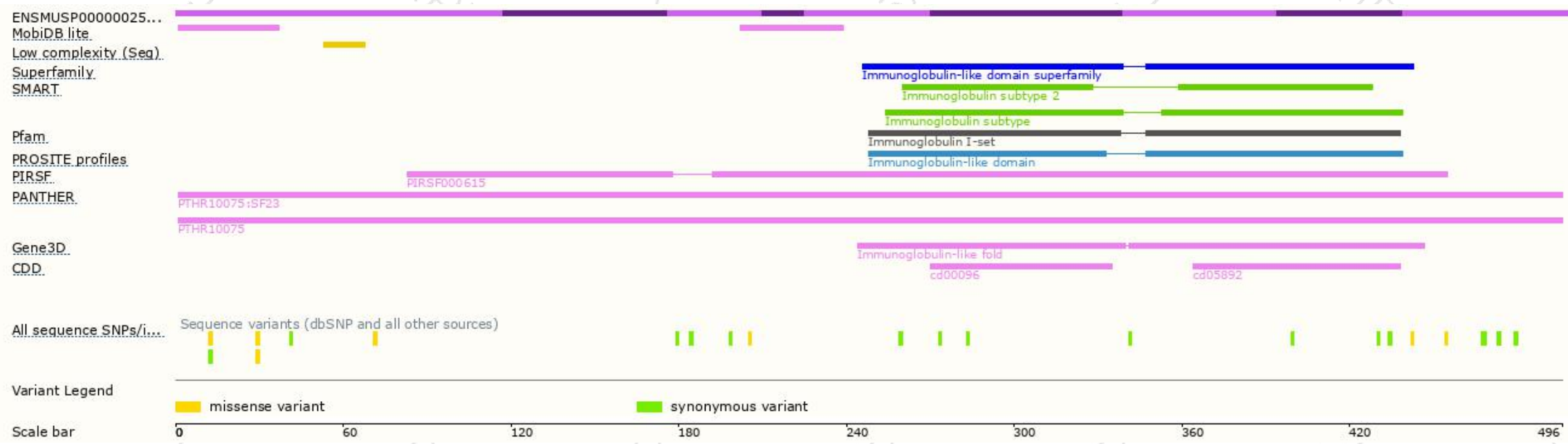
The strategy is based on the design of *Myot-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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