

Myh13 Cas9-KO Strategy

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Project Overview

Project Name

Myh13

Project type

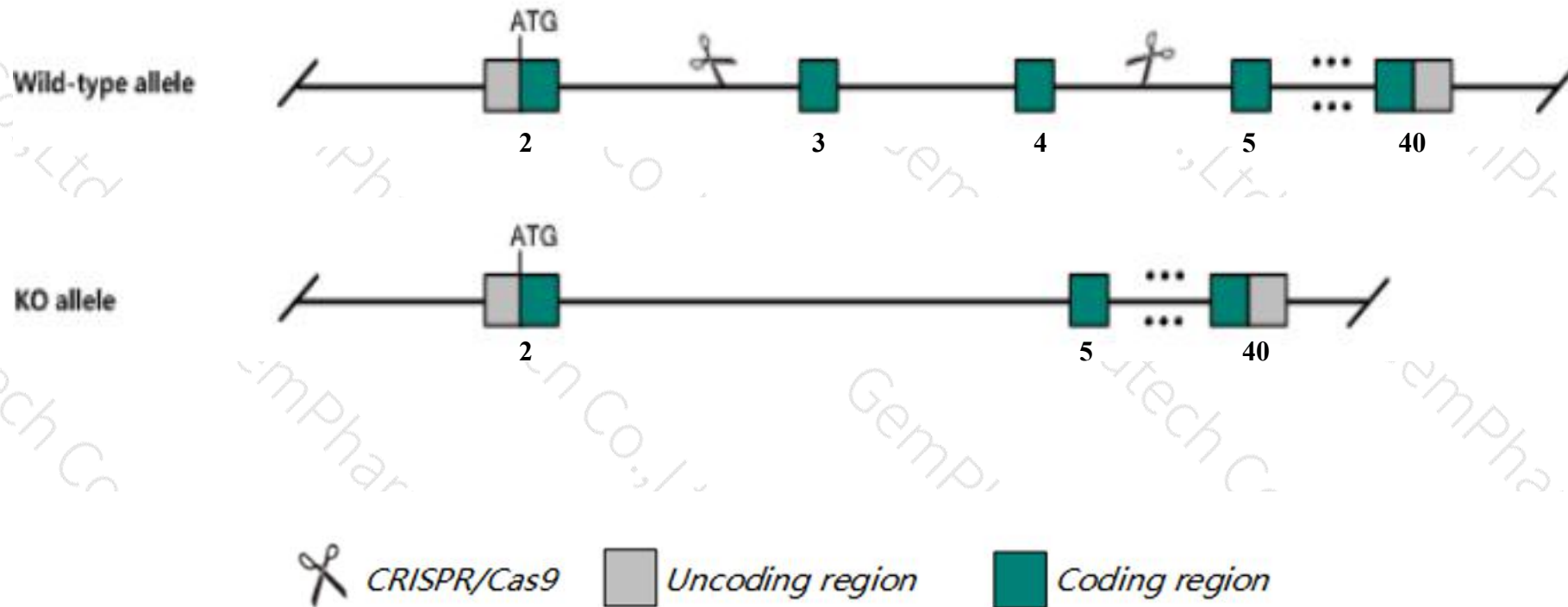
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myh13* gene. The schematic diagram is as follows:



- The *Myh13* gene has 4 transcripts. According to the structure of *Myh13* gene, exon3-exon4 of *Myh13*-202(ENSMUST00000108684.7) transcript is recommended as the knockout region. The region contains 301bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myh13* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Myh13* gene is located on the Chr11. 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.
- The effect on transcript *Myh13*-204 is unknown.
- 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)

Myh13 myosin, heavy polypeptide 13, skeletal muscle [Mus musculus (house mouse)]

Gene ID: 544791, updated on 13-Mar-2020

Summary



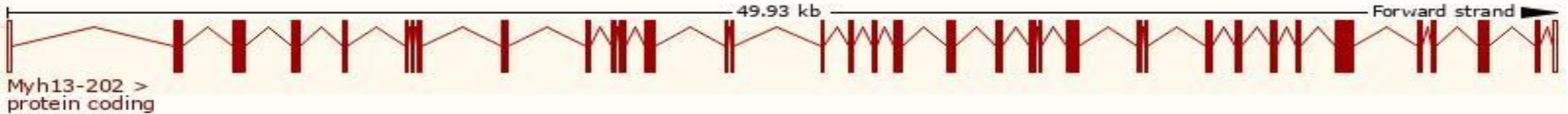
Official Symbol	Myh13 provided by MGI
Official Full Name	myosin, heavy polypeptide 13, skeletal muscle provided by MGI
Primary source	MGI:MGI:1339967
See related	Ensembl:ENSMUSG00000060180
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	MyHC-eo
Expression	Biased expression in mammary gland adult (RPKM 3.6), limb E14.5 (RPKM 1.6) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

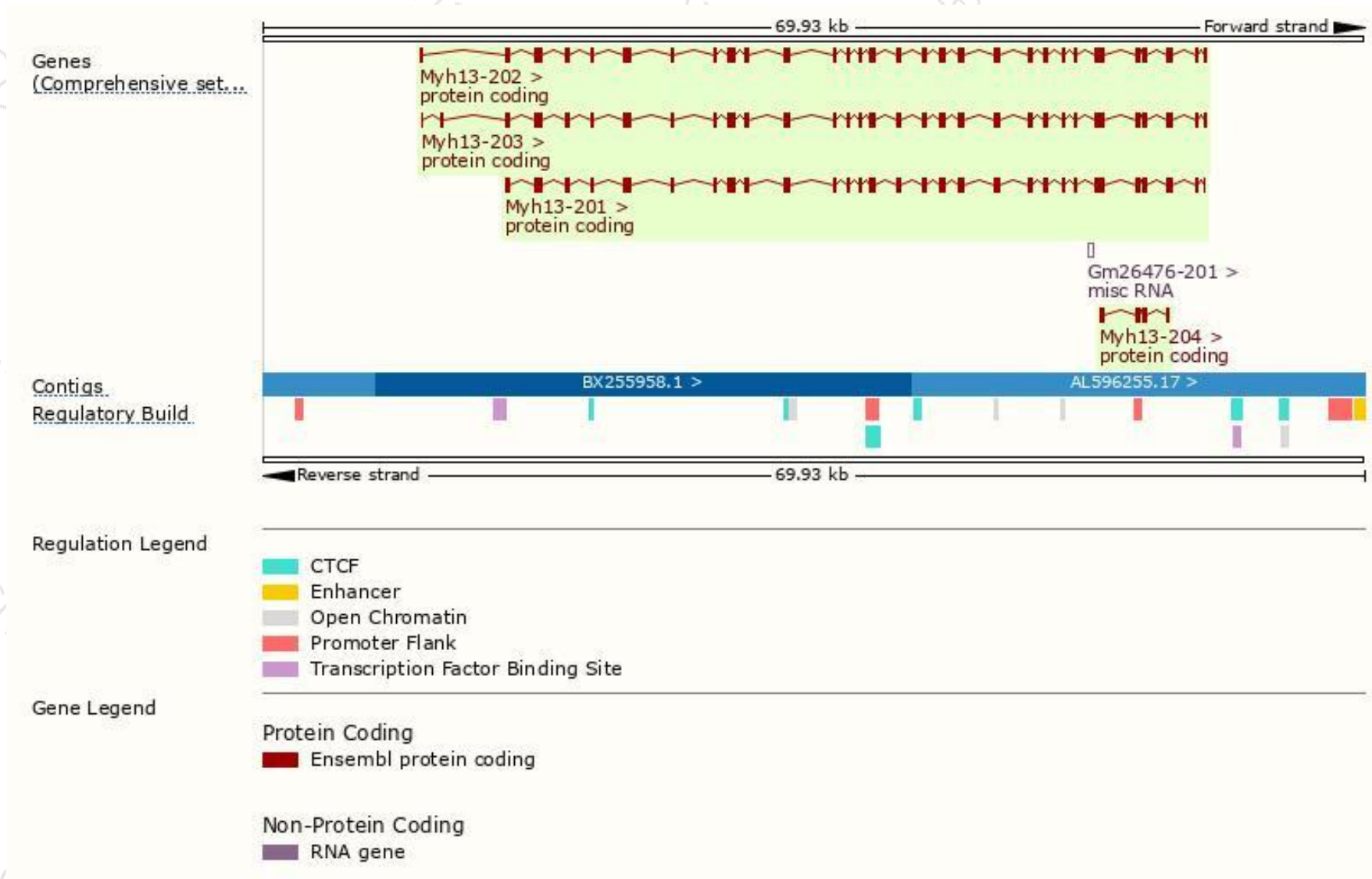
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myh13-202	ENSMUST00000108684.7	6062	1938aa	Protein coding	CCDS36185	B1AR69	TSL:5 GENCODE basic APPRIS P1
Myh13-203	ENSMUST00000180845.7	5991	1938aa	Protein coding	CCDS36185	B1AR69	TSL:5 GENCODE basic APPRIS P1
Myh13-201	ENSMUST00000081911.11	5817	1938aa	Protein coding	CCDS36185	B1AR69	TSL:5 GENCODE basic APPRIS P1
Myh13-204	ENSMUST00000181027.1	668	223aa	Protein coding	-	M0QWL0	CDS 5' and 3' incomplete TSL:3

The strategy is based on the design of *Myh13-202* transcript,the transcription is shown below:



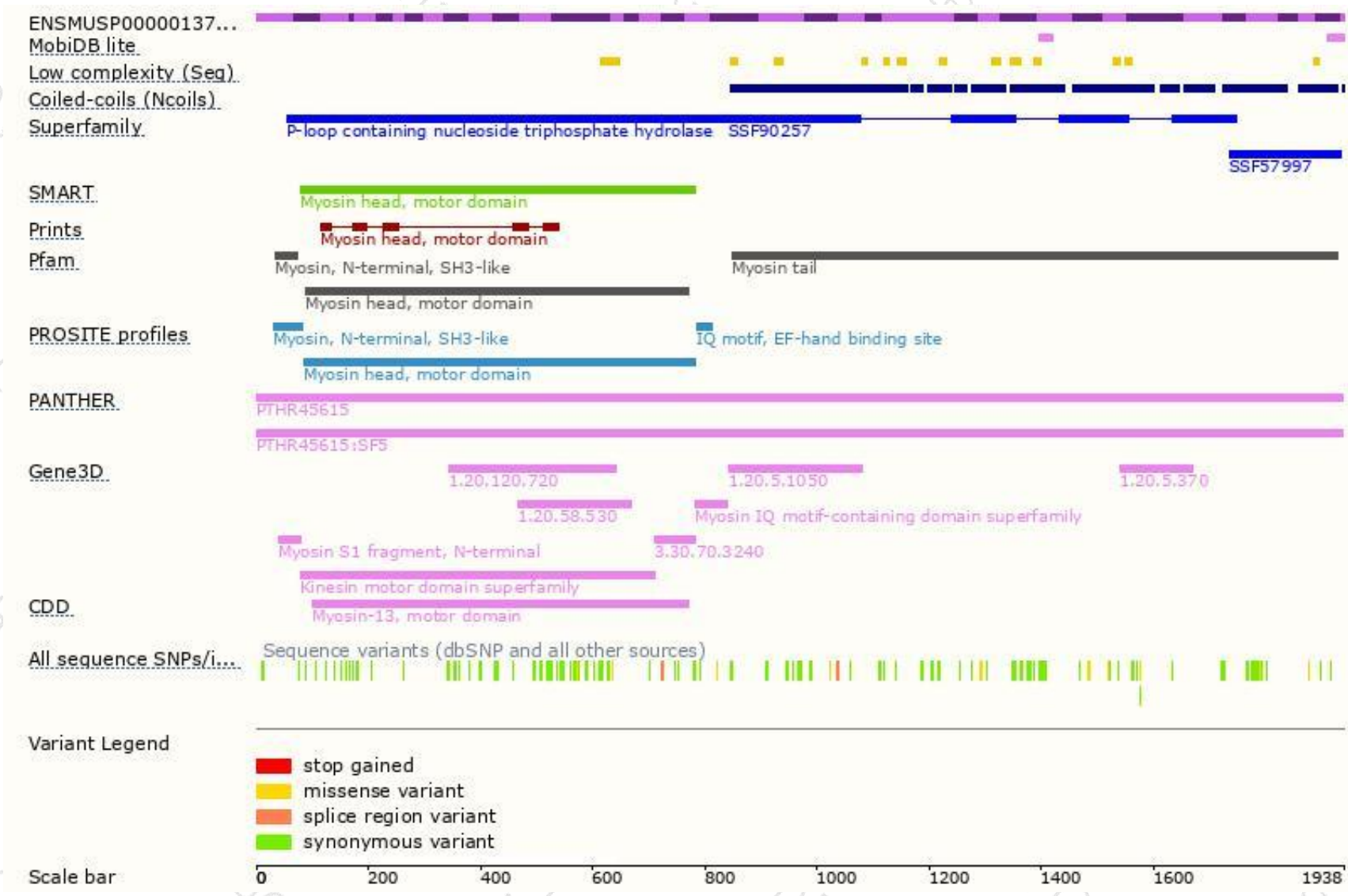
Genomic location distribution



Protein domain



集萃药康
GemPharmatech



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

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