

Myo19 Cas9-KO Strategy

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Project Overview

Project Name

Myo19

Project type

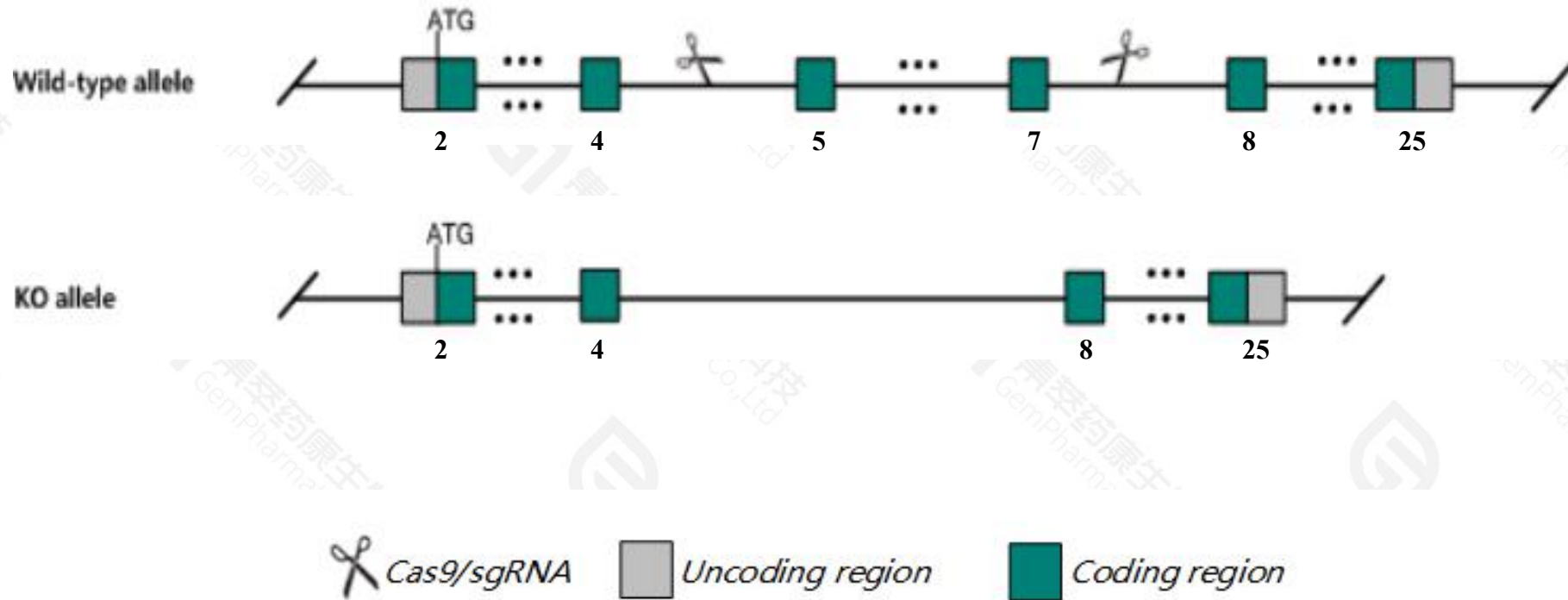
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myo19* gene. The schematic diagram is as follows:



- The *Myo19* gene has 7 transcripts. According to the structure of *Myo19* gene, exon5-exon7 of *Myo19*-202(ENSMUST00000093969.11) transcript is recommended as the knockout region. The region contains 317bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myo19* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Myo19* 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.
- Transcript ENSMUST00020183619.1 will be deleted.
- 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.

Myo19 myosin XIX [Mus musculus (house mouse)]

Gene ID: 66196, updated on 17-Feb-2021

Summary



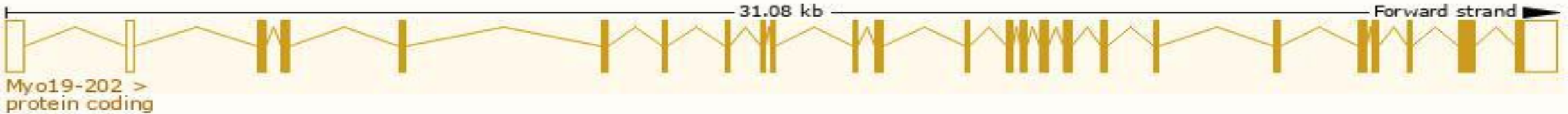
Official Symbol	Myo19 provided by MGI
Official Full Name	myosin XIX provided by MGI
Primary source	MGI:MGI:1913446
See related	Ensembl:ENSMUSG00000020527
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110055A02Rik, Myohd, Myohd1
Expression	Ubiquitous expression in colon adult (RPKM 17.9), kidney adult (RPKM 12.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

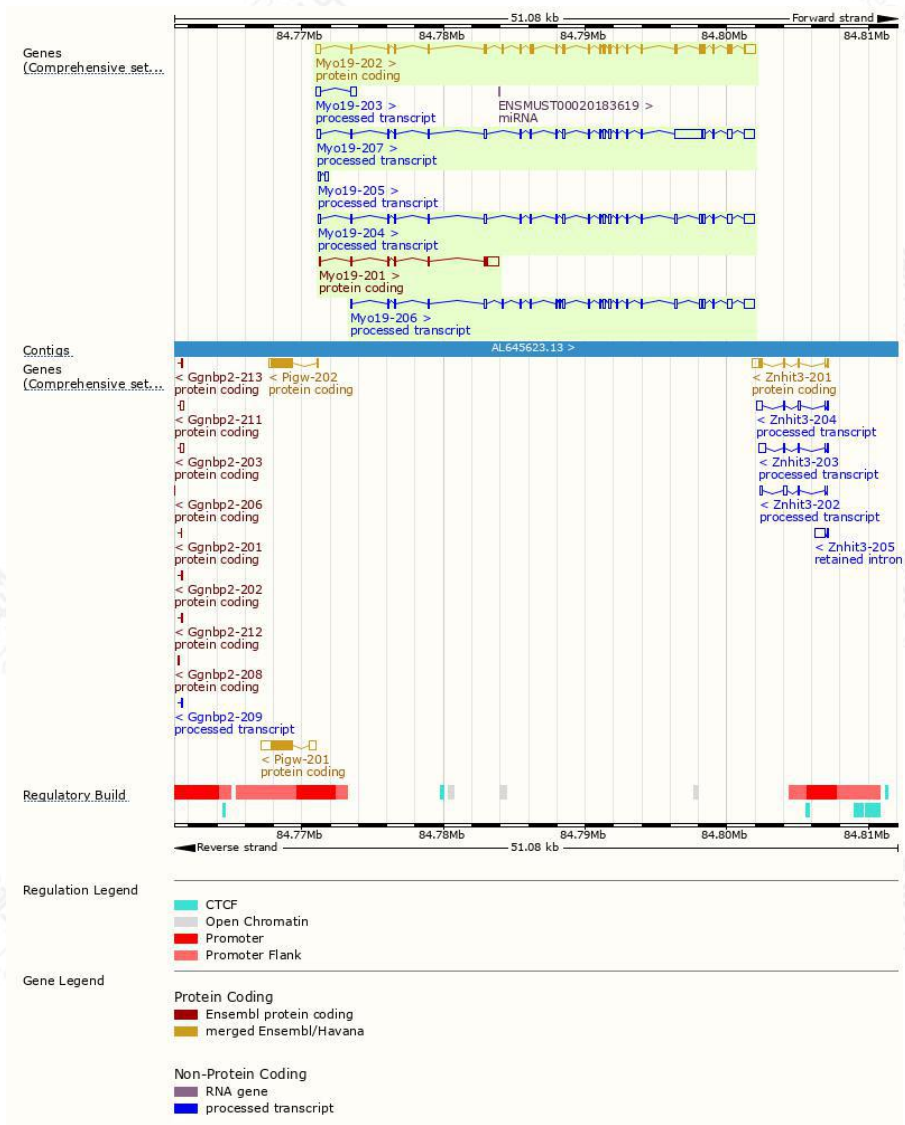
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myo19-202	ENSMUST00000093969.11	4091	963aa	Protein coding	CCDS48871		TSL:5 , GENCODE basic , APPRIS P1 ,
Myo19-201	ENSMUST00000020837.7	1669	206aa	Protein coding	-		TSL:1 , GENCODE basic ,
Myo19-207	ENSMUST00000141705.8	5360	No protein	Processed transcript	-		TSL:2 ,
Myo19-206	ENSMUST00000141173.2	3651	No protein	Processed transcript	-		TSL:5 ,
Myo19-204	ENSMUST00000124152.8	3644	No protein	Processed transcript	-		TSL:1 ,
Myo19-203	ENSMUST00000123515.2	748	No protein	Processed transcript	-		TSL:3 ,
Myo19-205	ENSMUST00000124475.2	416	No protein	Processed transcript	-		TSL:2 ,

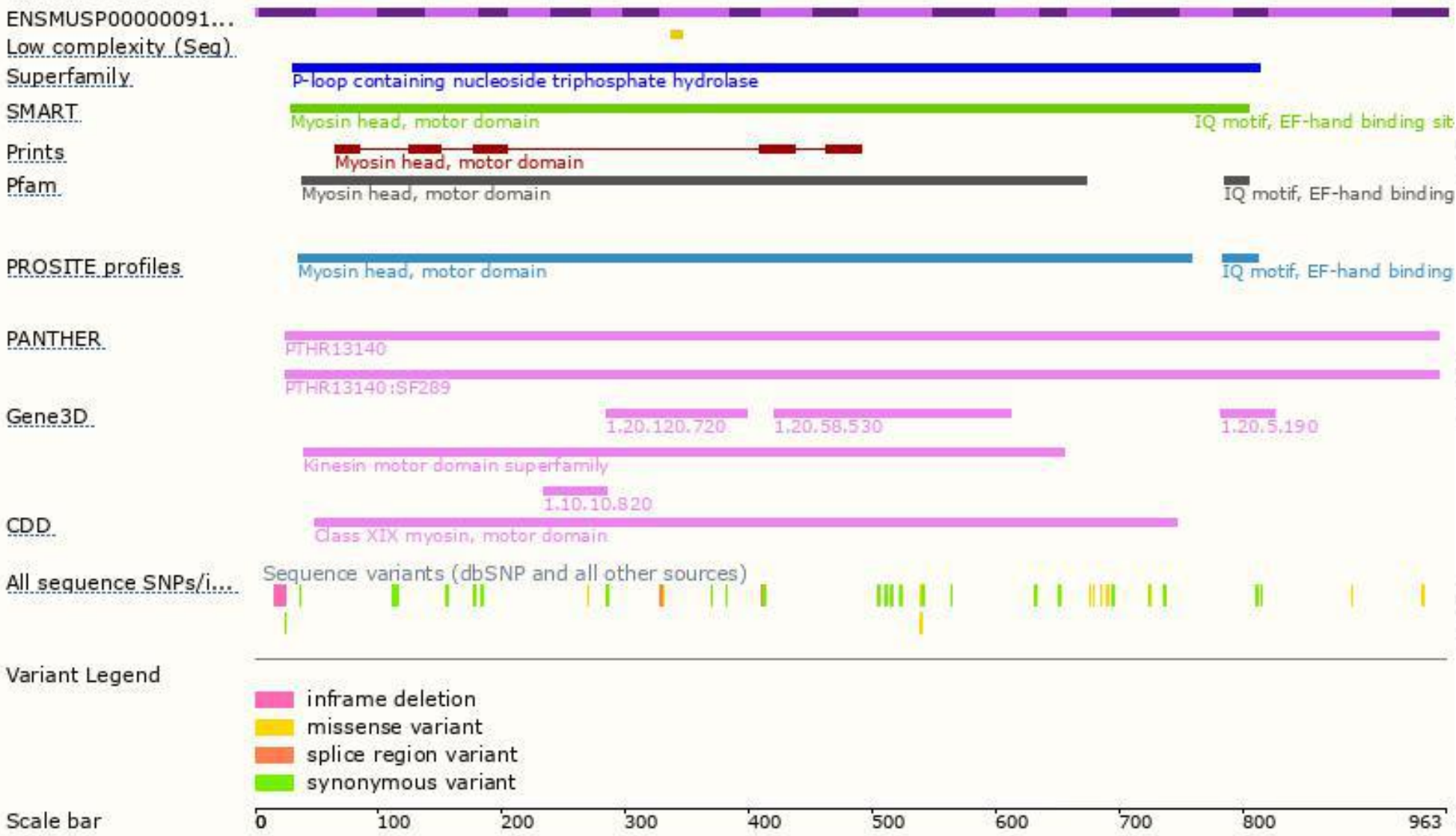
The strategy is based on the design of *Myo19-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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