

***Myo1b* Cas9-KO Strategy**

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Project Overview

Project Name

Myo1b

Project type

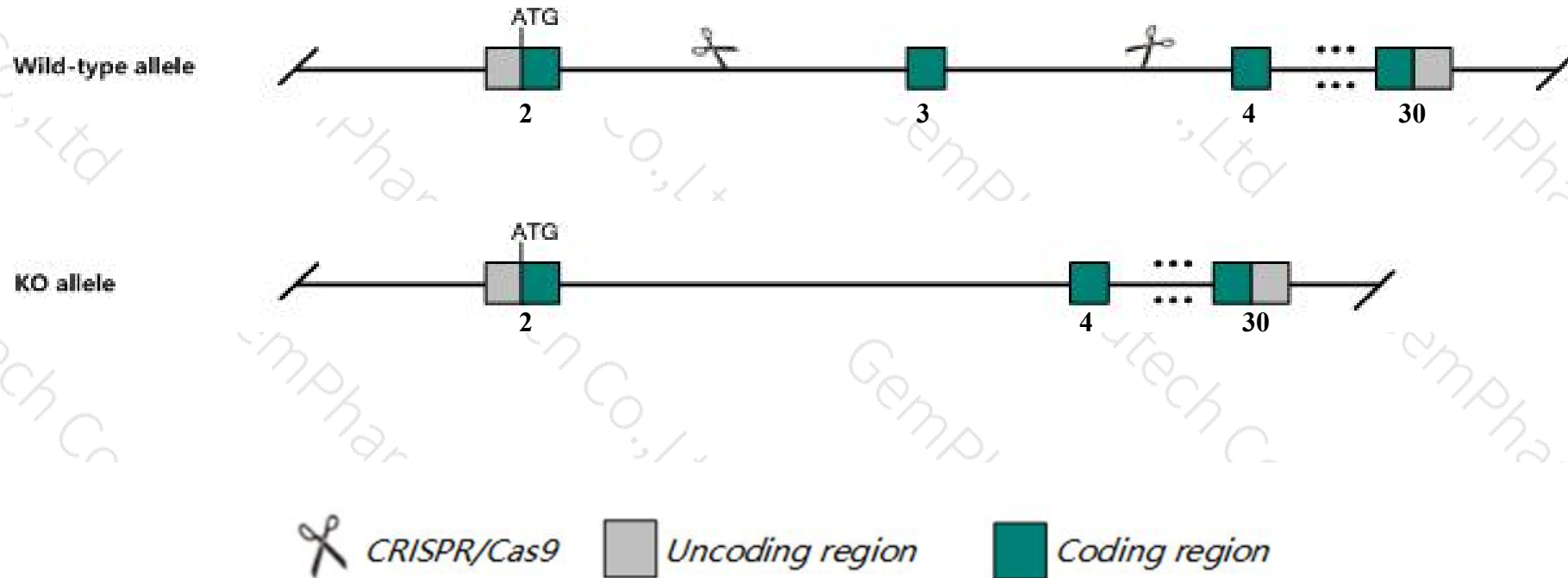
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myo1b* gene. The schematic diagram is as follows:



- The *Myo1b* gene has 15 transcripts. According to the structure of *Myo1b* gene, exon3 of *Myo1b-202* (ENSMUST00000046390.13) transcript is recommended as the knockout region. The region contains 116bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myo1b* gene. The brief process is as follows: CRISPR/Cas9 system

- Transcript *Myo1b*-205&207&208&209&210&211&212&214 may not be affected.
- The *Myo1b* gene is located on the Chr1. 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)

Myo1b myosin IB [*Mus musculus* (house mouse)]

Gene ID: 17912, updated on 18-Feb-2020

Summary

- Official Symbol** Myo1b provided by [MGI](#)
- Official Full Name** myosin IB provided by [MGI](#)
- Primary source** [MGI:MGI:107752](#)
- See related** [Ensembl:ENSMUSG00000018417](#)
- 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** MM1a; MIH-L; AA406997
- Expression** Broad expression in CNS E11.5 (RPKM 15.5), CNS E14 (RPKM 12.3) and 22 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 1 C1.1; 1 26.58 cM

See Myo1b in [Genome Data Viewer](#)

Exon count: 34

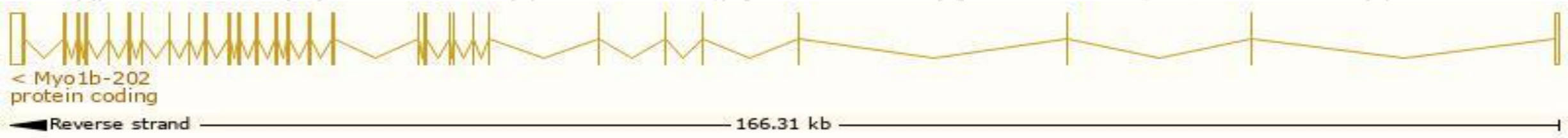
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	1	NC_000067.6 (51749758..51916063, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	1	NC_000067.5 (51806609..51972818, complement)

Transcript information (Ensembl)

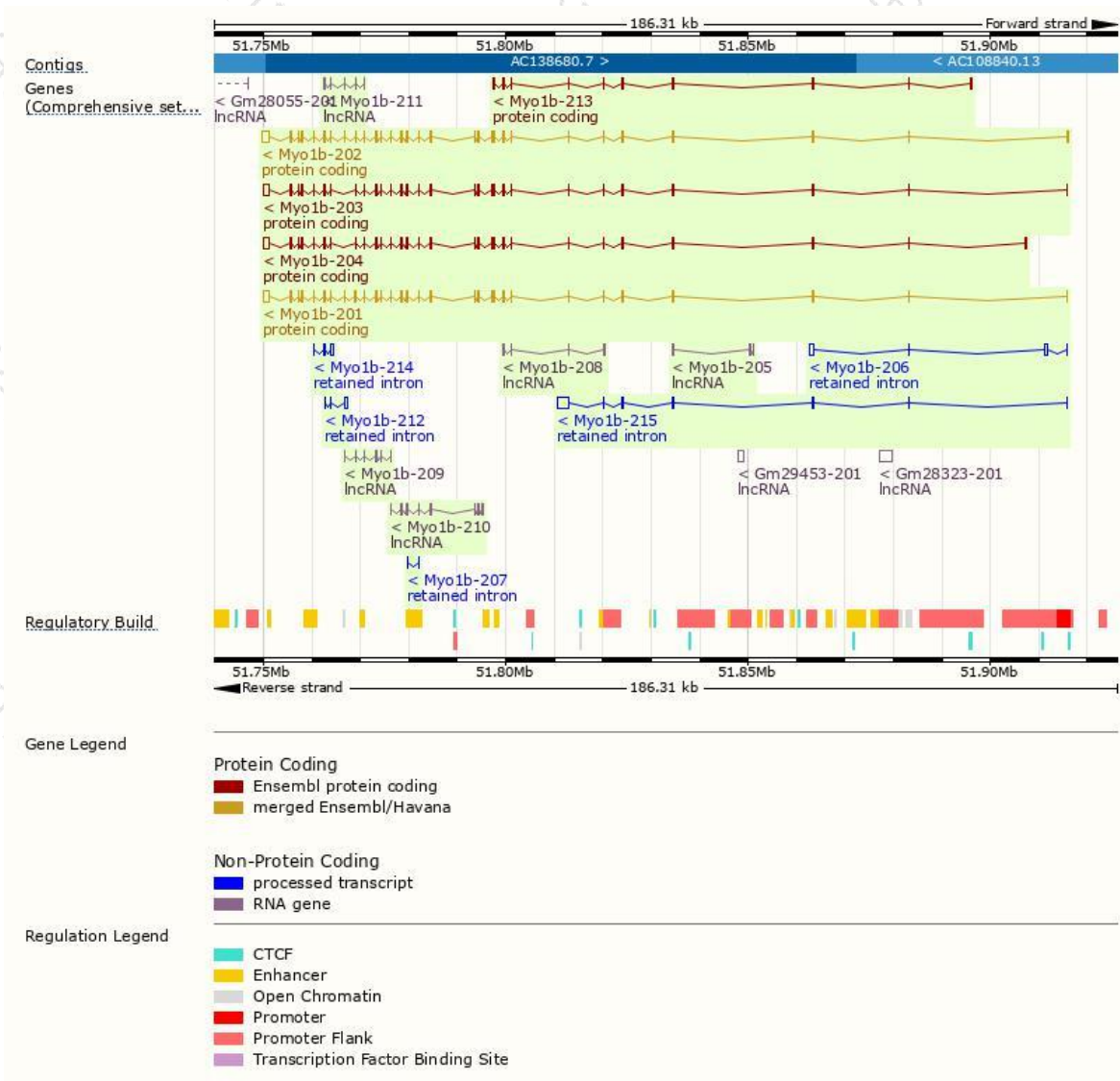
The gene has 15 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myo1b-202	ENSMUST00000046390.13	5052	1107aa	Protein coding	CCDS14942	P46735	TSL:1 GENCODE basic APPRIS P3
Myo1b-201	ENSMUST00000018561.13	4767	1136aa	Protein coding	CCDS48254	Q7TQD7	TSL:1 GENCODE basic APPRIS ALT 1
Myo1b-203	ENSMUST000000114537.8	4618	1078aa	Protein coding	CCDS69887	E9QNH6	TSL:5 GENCODE basic APPRIS ALT 1
Myo1b-204	ENSMUST000000114541.7	4616	1084aa	Protein coding	-	E9Q580	TSL:5 GENCODE basic
Myo1b-213	ENSMUST000000144694.1	1244	299aa	Protein coding	-	D3YV80	CDS 3' incomplete TSL:5
Myo1b-215	ENSMUST000000151525.7	3045	No protein	Retained intron	-	-	TSL:1
Myo1b-206	ENSMUST000000126657.1	1558	No protein	Retained intron	-	-	TSL:1
Myo1b-214	ENSMUST000000145367.1	765	No protein	Retained intron	-	-	TSL:5
Myo1b-212	ENSMUST000000140930.1	683	No protein	Retained intron	-	-	TSL:3
Myo1b-207	ENSMUST000000126952.1	282	No protein	Retained intron	-	-	TSL:3
Myo1b-210	ENSMUST000000136701.1	969	No protein	lncRNA	-	-	TSL:1
Myo1b-209	ENSMUST000000136273.1	666	No protein	lncRNA	-	-	TSL:5
Myo1b-211	ENSMUST000000140731.7	448	No protein	lncRNA	-	-	TSL:2
Myo1b-208	ENSMUST000000135125.7	354	No protein	lncRNA	-	-	TSL:2
Myo1b-205	ENSMUST000000123299.1	280	No protein	lncRNA	-	-	TSL:5

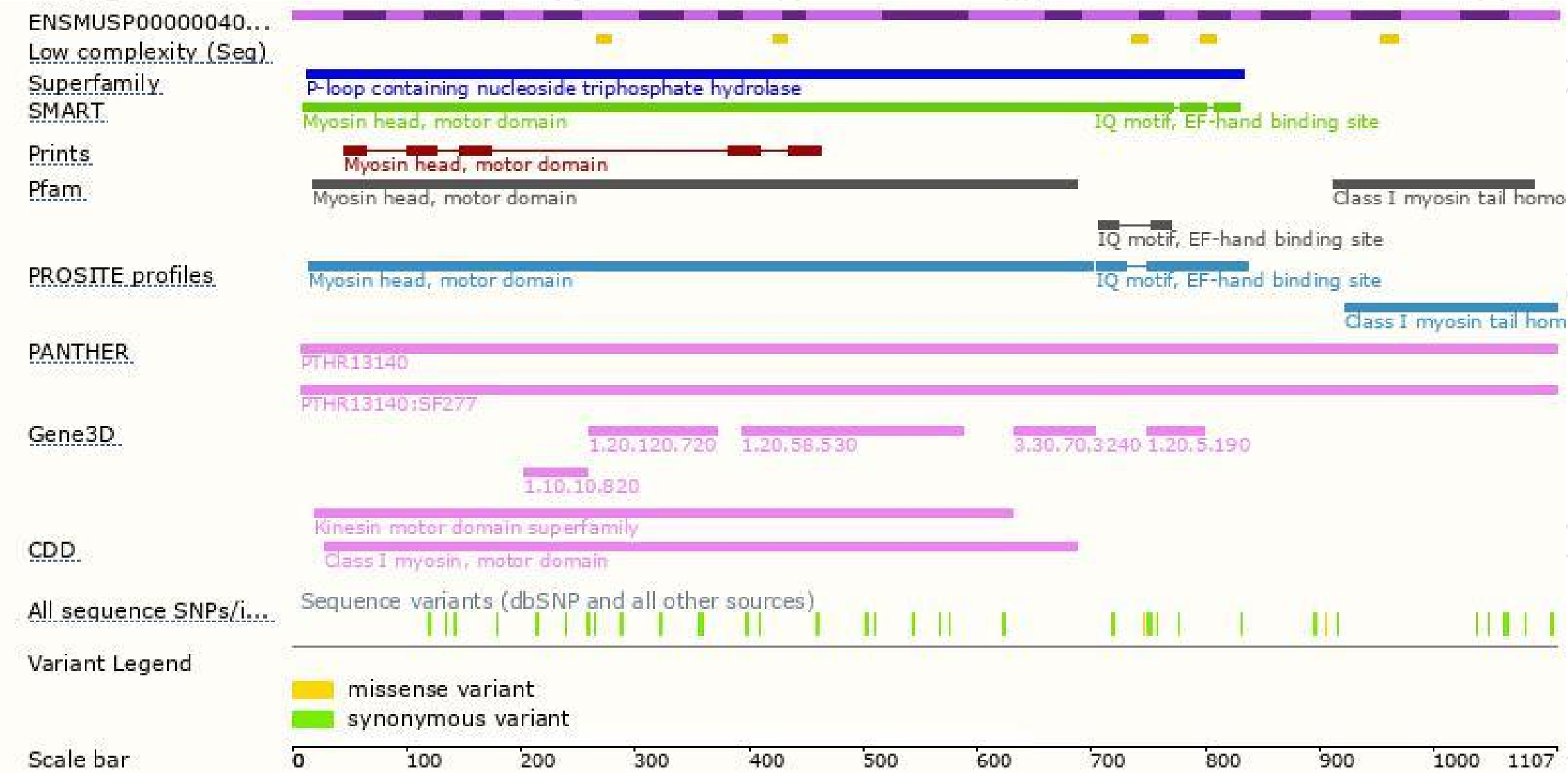
The strategy is based on the design of *Myo1b-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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