

Myo5c Cas9-KO Strategy

Designer: Xiaojing Li

Reviewer: JiaYu

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Project Overview

Project Name

Myo5c

Project type

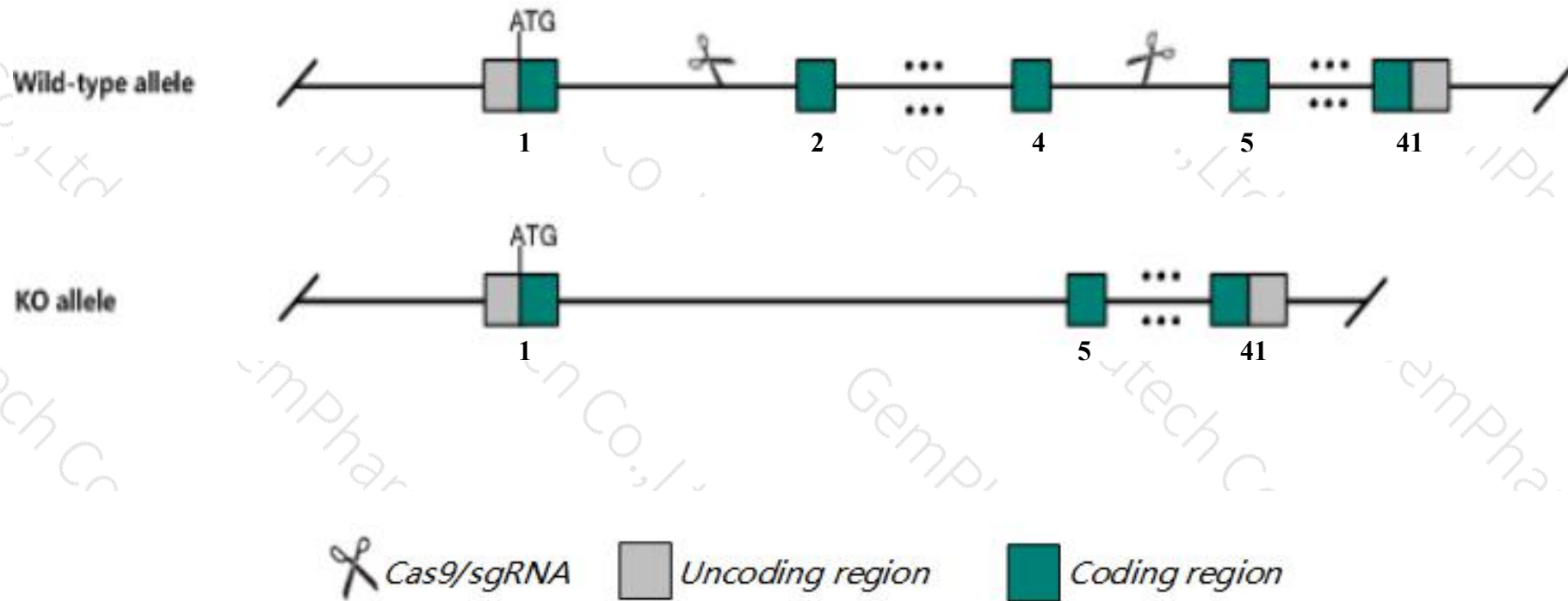
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myo5c* gene. The schematic diagram is as follows:



- The *Myo5c* gene has 7 transcripts. According to the structure of *Myo5c* gene, exon2-exon4 of *Myo5c*-201(ENSMUST00000036555.7) transcript is recommended as the knockout region. The region contains 422bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myo5c* 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 *Myo5c* gene is located on the Chr9. 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)

Myo5c myosin VC [Mus musculus (house mouse)]

Gene ID: 208943, updated on 13-Mar-2020

Summary



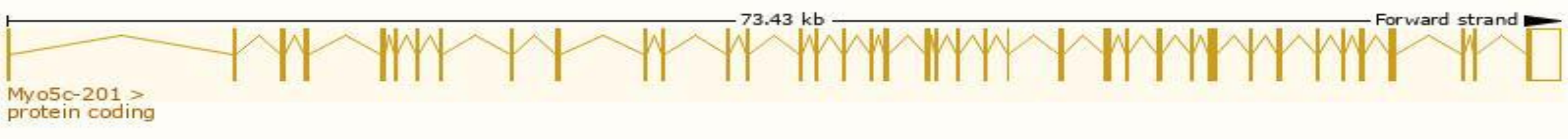
Official Symbol	Myo5c provided by MGI
Official Full Name	myosin VC provided by MGI
Primary source	MGI:MGI:2442485
See related	Ensembl:ENSMUSG00000033590
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9130003O20Rik, BB085560, C330029I24
Expression	Biased expression in colon adult (RPKM 9.6), lung adult (RPKM 7.2) and 13 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

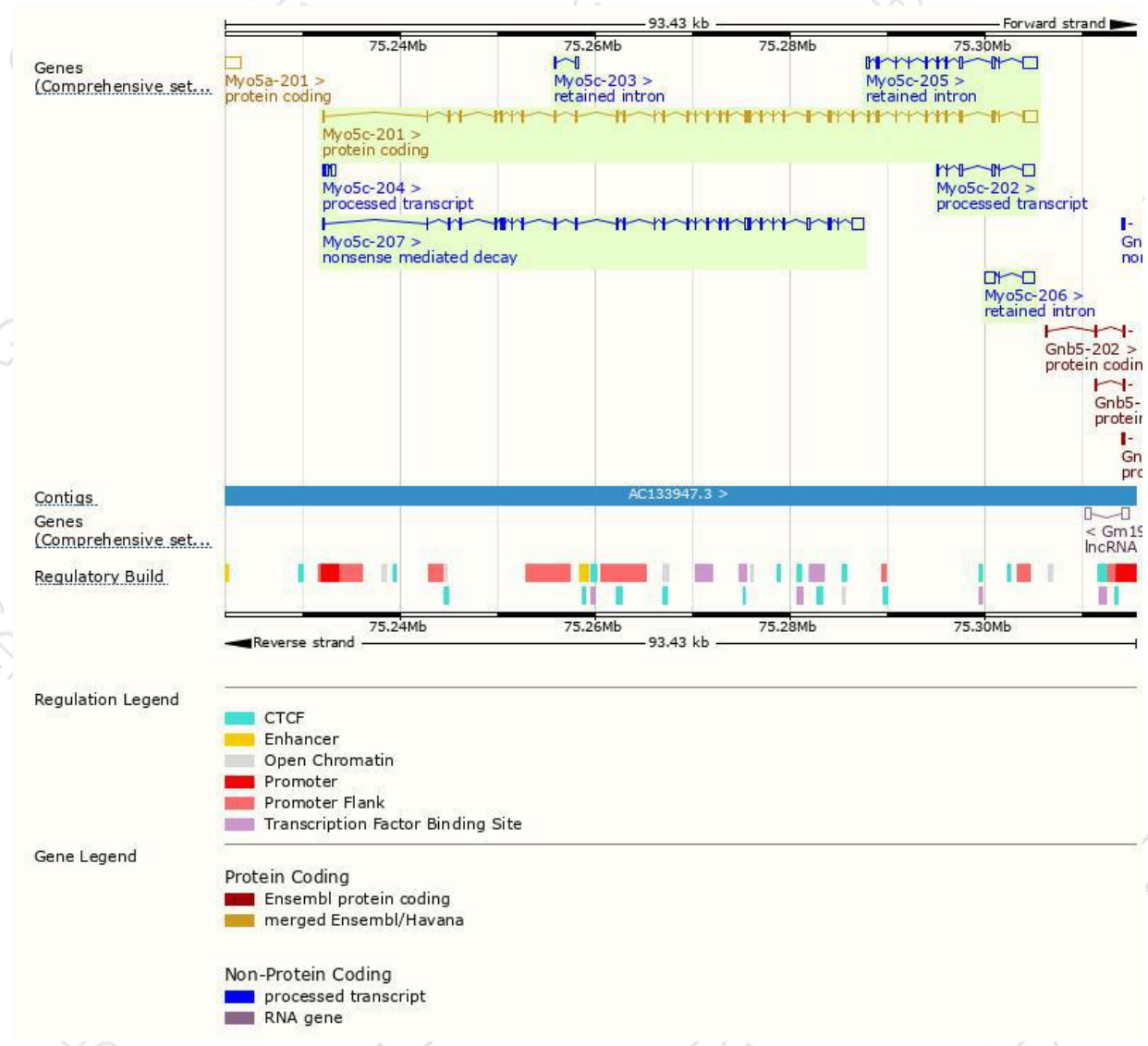
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Myo5c-201	ENSMUST00000036555.7	6727	1742aa	Protein coding	CCDS40691	E9Q1F5	TSL:5 GENCODE basic APPRIS P1
Myo5c-207	ENSMUST00000216788.1	4782	269aa	Nonsense mediated decay	-	A0A1L1SUFO	TSL:1
Myo5c-202	ENSMUST00000213424.1	1847	No protein	Processed transcript	-	-	TSL:1
Myo5c-204	ENSMUST00000215437.1	792	No protein	Processed transcript	-	-	TSL:1
Myo5c-205	ENSMUST00000215620.1	3189	No protein	Retained intron	-	-	TSL:1
Myo5c-206	ENSMUST00000216529.1	2204	No protein	Retained intron	-	-	TSL:1
Myo5c-203	ENSMUST00000215352.1	483	No protein	Retained intron	-	-	TSL:1

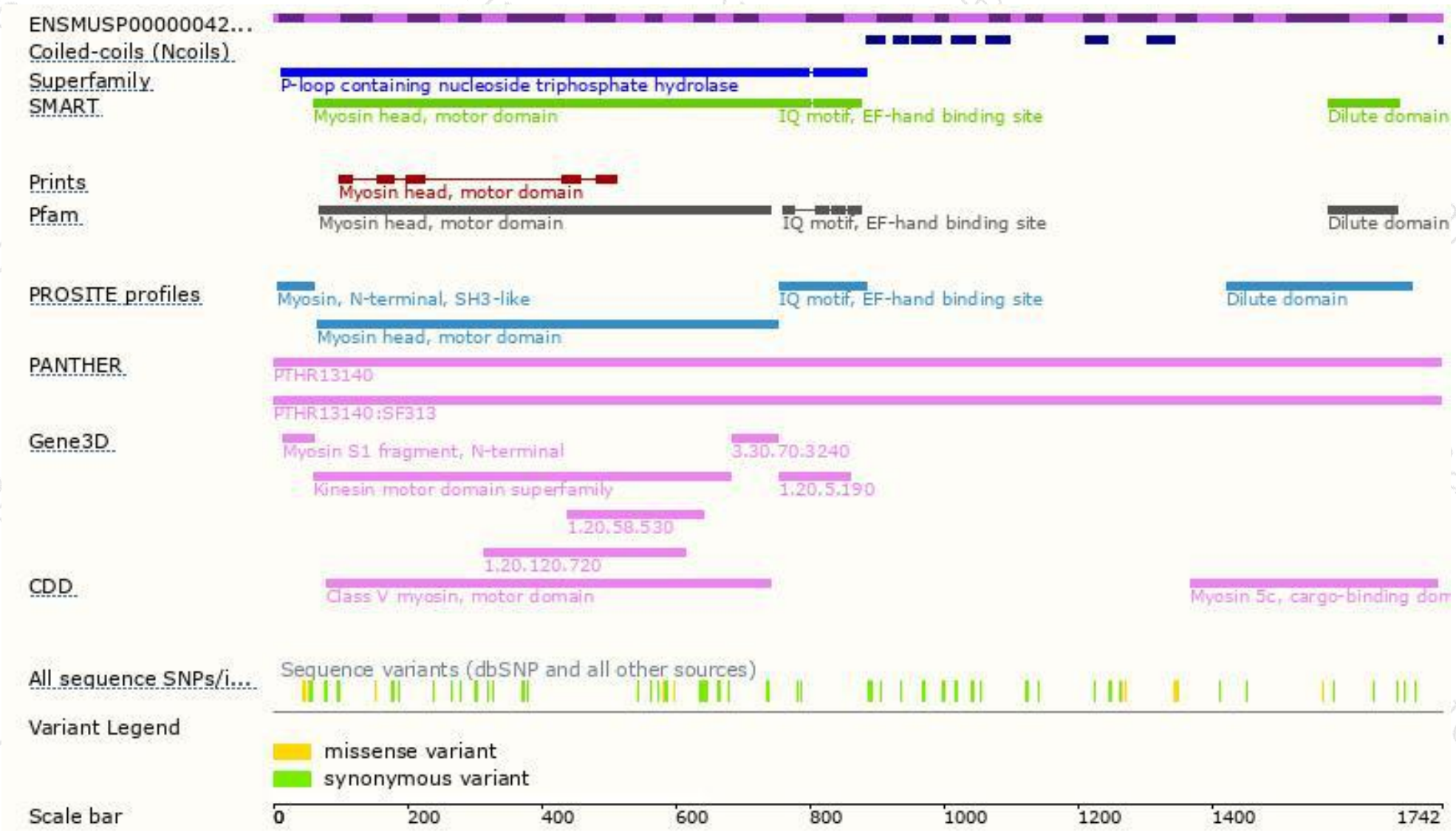
The strategy is based on the design of *Myo5c-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

