

# *Myl6* Cas9-KO Strategy

**Designer:**

**JiaYu**

**Reviewer:**

**Xiaojing Li**

**Design Date:**

**2020-2-24**

# Project Overview

**Project Name**

*Myl6*

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Myf6* gene. The schematic diagram is as follows:



- The *Myl6* gene has 15 transcripts. According to the structure of *Myl6* gene, exon3-exon6 of *Myl6-201* (ENSMUST00000164181.1) transcript is recommended as the knockout region. The region contains 425bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Myl6* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Myl6* gene is located on the Chr10. 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)

## Myl6 myosin, light polypeptide 6, alkali, smooth muscle and non-muscle [Mus musculus (house mouse)]

Gene ID: 17904, updated on 7-Apr-2019

### Summary



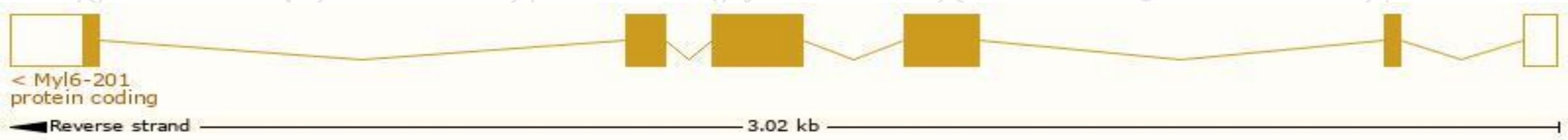
<b>Official Symbol</b>	Myl6 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	myosin, light polypeptide 6, alkali, smooth muscle and non-muscle provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:109318</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000090841</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	ESMLC, LC17, LC17-GI, MLC-3, MLC1SM, Myln
<b>Expression</b>	Broad expression in bladder adult (RPKM 2188.3), placenta adult (RPKM 580.4) and 23 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

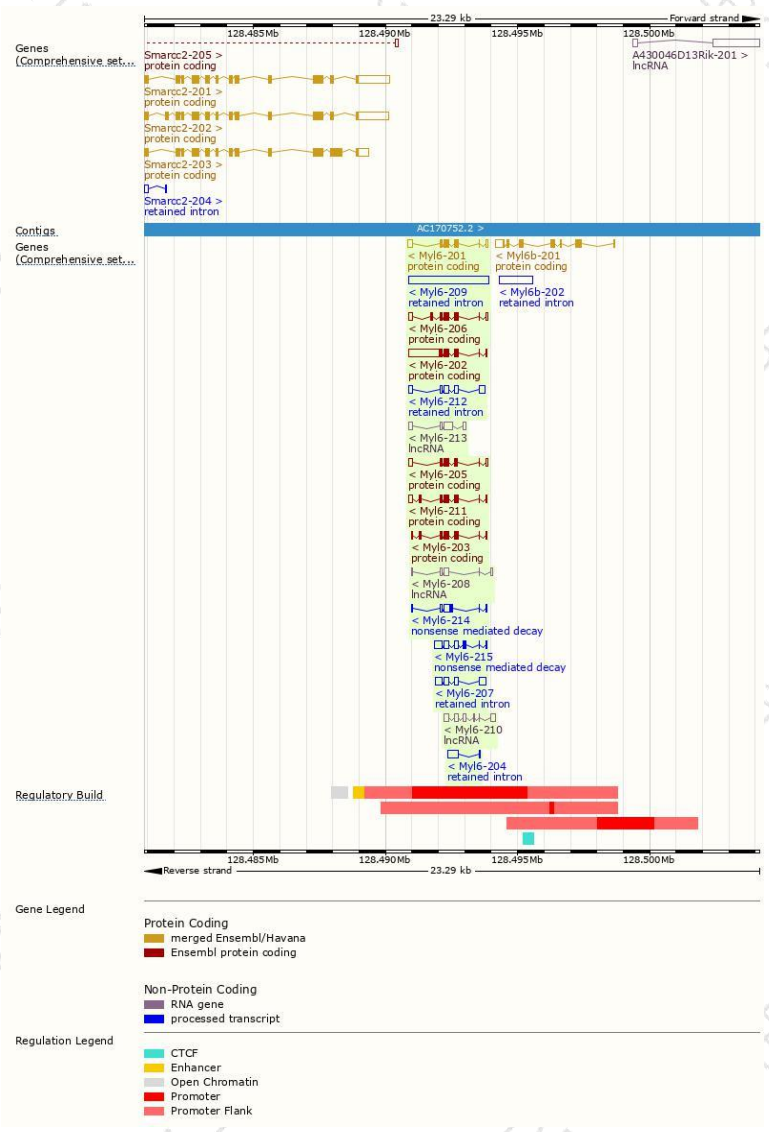
The gene has 15 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
MyI6-201	<a href="#">ENSMUST00000164181.1</a>	665	<a href="#">151aa</a>	Protein coding	<a href="#">CCDS48728</a>	<a href="#">Q60605</a> <a href="#">Q642K0</a>	TSL:1 GENCODE basic APPRIS P2
MyI6-202	<a href="#">ENSMUST00000217733.1</a>	1668	<a href="#">152aa</a>	Protein coding	-	<a href="#">A0A1W2P6F6</a>	TSL:1 GENCODE basic
MyI6-211	<a href="#">ENSMUST00000219236.1</a>	692	<a href="#">158aa</a>	Protein coding	-	<a href="#">A0A1W2P7Q9</a>	TSL:2 GENCODE basic
MyI6-206	<a href="#">ENSMUST00000218127.1</a>	691	<a href="#">151aa</a>	Protein coding	-	<a href="#">Q60605</a>	TSL:2 GENCODE basic APPRIS ALT1
MyI6-205	<a href="#">ENSMUST00000217969.1</a>	608	<a href="#">139aa</a>	Protein coding	-	<a href="#">A0A1W2P6G5</a>	TSL:2 GENCODE basic
MyI6-203	<a href="#">ENSMUST00000217776.1</a>	562	<a href="#">158aa</a>	Protein coding	-	<a href="#">A0A1W2P7Q9</a>	TSL:3 GENCODE basic
MyI6-215	<a href="#">ENSMUST00000220427.1</a>	746	<a href="#">38aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P888</a>	TSL:3
MyI6-214	<a href="#">ENSMUST00000220307.1</a>	496	<a href="#">46aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P8F0</a>	TSL:5
MyI6-209	<a href="#">ENSMUST00000218813.1</a>	3040	No protein	Retained intron	-	-	TSL:NA
MyI6-207	<a href="#">ENSMUST00000218170.1</a>	824	No protein	Retained intron	-	-	TSL:2
MyI6-212	<a href="#">ENSMUST00000219554.1</a>	790	No protein	Retained intron	-	-	TSL:2
MyI6-204	<a href="#">ENSMUST00000217913.1</a>	436	No protein	Retained intron	-	-	TSL:1
MyI6-213	<a href="#">ENSMUST00000219655.1</a>	651	No protein	lncRNA	-	-	TSL:2
MyI6-210	<a href="#">ENSMUST00000219100.1</a>	620	No protein	lncRNA	-	-	TSL:3
MyI6-208	<a href="#">ENSMUST00000218713.1</a>	369	No protein	lncRNA	-	-	TSL:5

The strategy is based on the design of *MyI6-201* transcript,The transcription is shown below

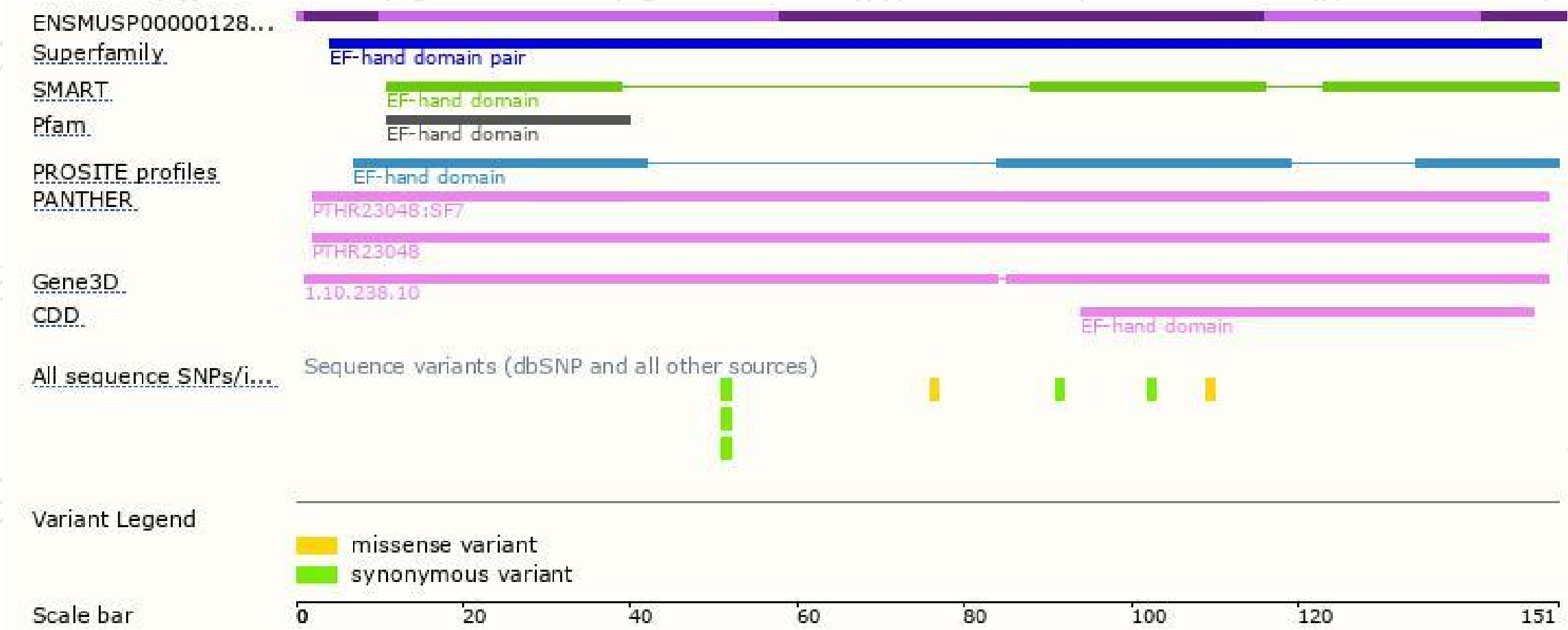


# Genomic location distribution





# Protein domain



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

Tel: 400-9660890

