

Mrps36 Cas9-KO Strategy

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Project Overview

Project Name

Mrps36

Project type

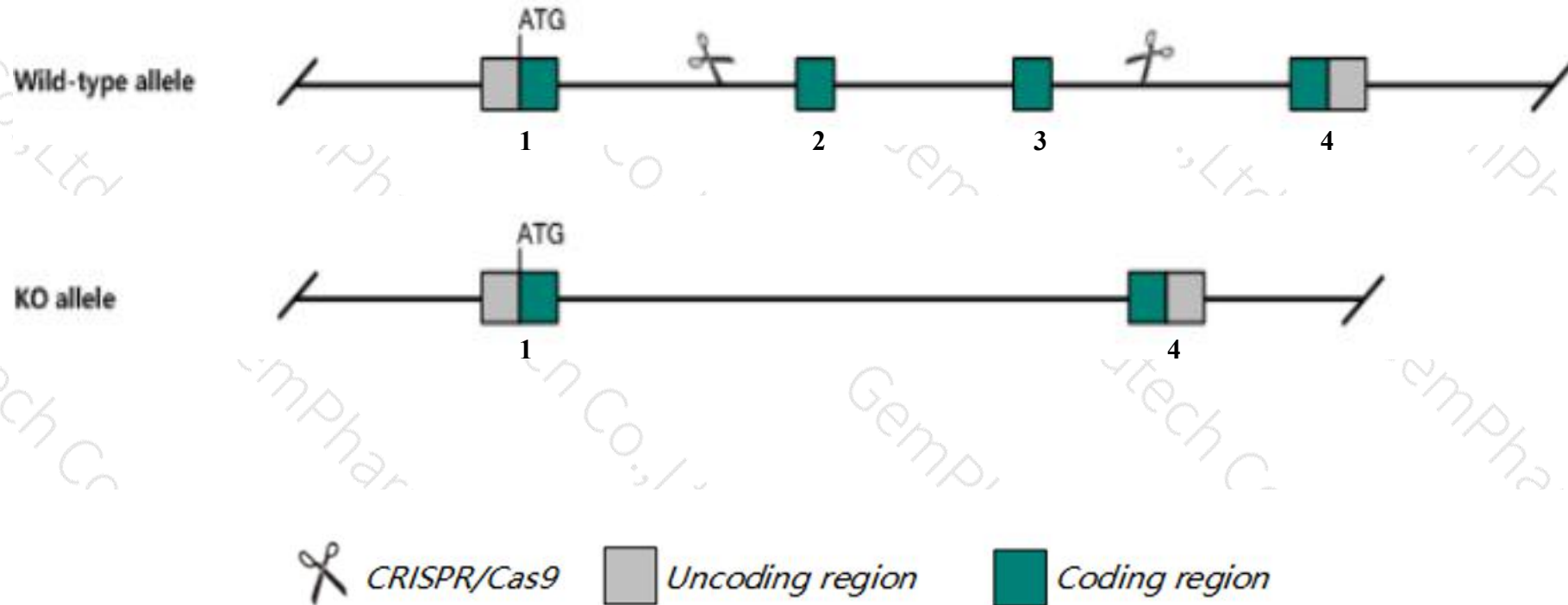
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Mrps36* gene. The schematic diagram is as follows:



- The *Mrps36* gene has 6 transcripts. According to the structure of *Mrps36* gene, exon2-exon3 of *Mrps36*-203(ENSMUST00000109333.7) transcript is recommended as the knockout region. The region contains 252bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Mrps36* 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 KO region deletes most of the coding sequence, but does not result in frameshift.
- The *Mrps36* gene is located on the Chr13. 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)

Mrps36 mitochondrial ribosomal protein S36 [*Mus musculus* (house mouse)]

Gene ID: 66128, updated on 25-Sep-2020

Summary

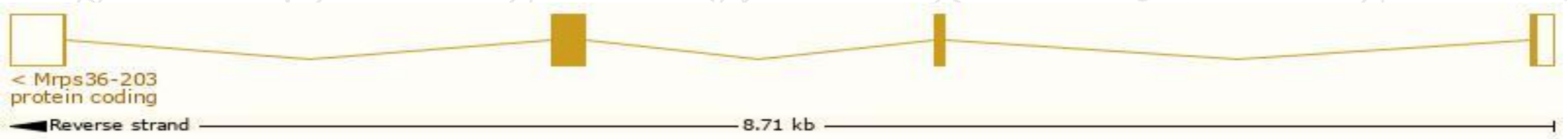
Official Symbol	Mrps36 provided by MGI
Official Full Name	mitochondrial ribosomal protein S36 provided by MGI
Primary source	MGI:MGI:1913378
See related	Ensembl:ENSMUSG000000061474
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	S36mt; 1110018B13Rik
Expression	Ubiquitous expression in heart adult (RPKM 42.2), testis adult (RPKM 40.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

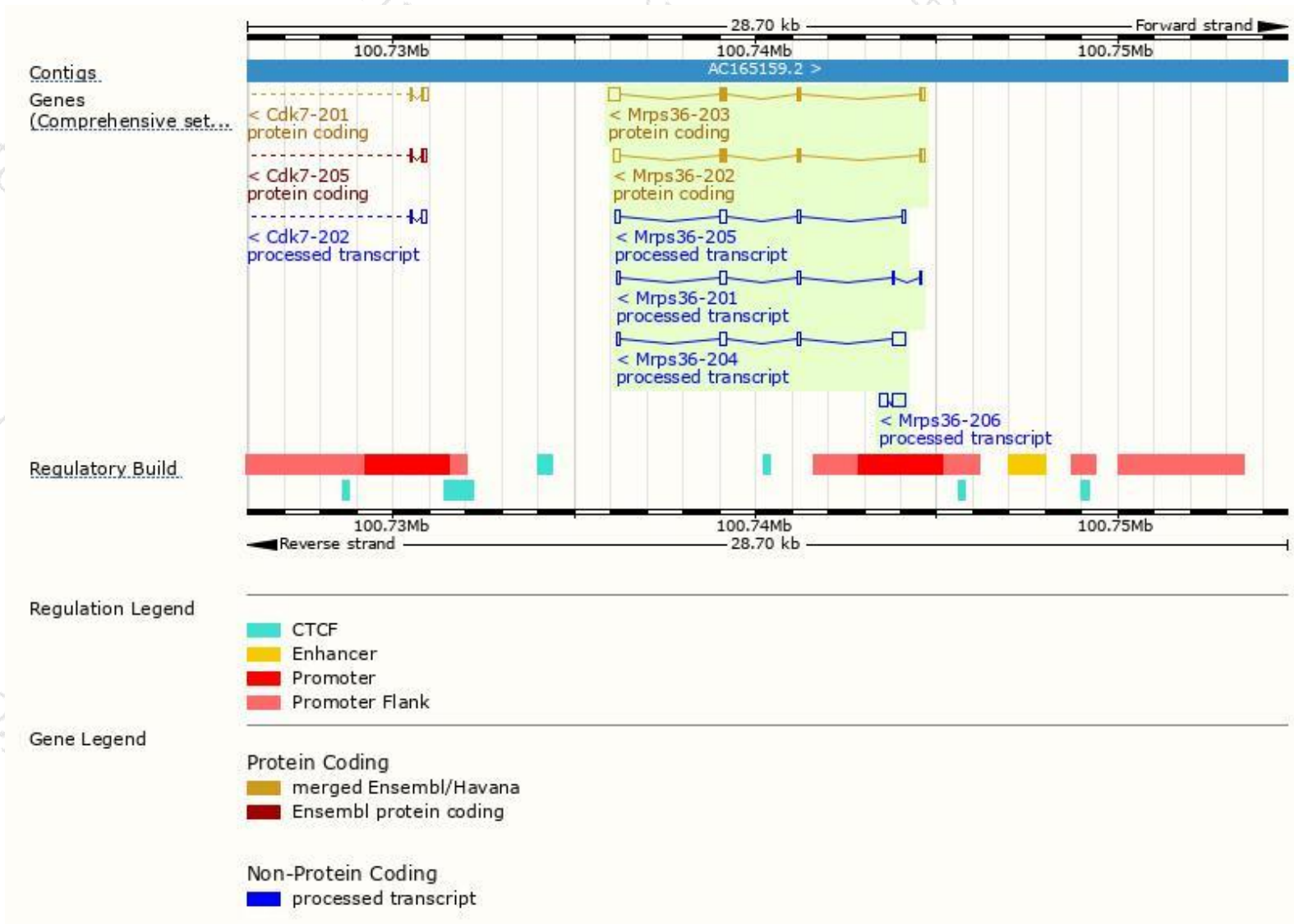
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Mrps36-203	ENSMUST00000109333.7	701	102aa	Protein coding	CCDS36767	Q9CQX8	TSL:1 GENCODE basic APPRIS P3
Mrps36-202	ENSMUST00000078573.4	571	100aa	Protein coding	CCDS49347	Q9D6T9	TSL:1 GENCODE basic APPRIS ALT1
Mrps36-204	ENSMUST00000125206.1	672	No protein	Processed transcript	-	-	TSL:3
Mrps36-206	ENSMUST00000150113.1	555	No protein	Processed transcript	-	-	TSL:2
Mrps36-205	ENSMUST00000132955.7	482	No protein	Processed transcript	-	-	TSL:3
Mrps36-201	ENSMUST00000076037.8	469	No protein	Processed transcript	-	-	TSL:3

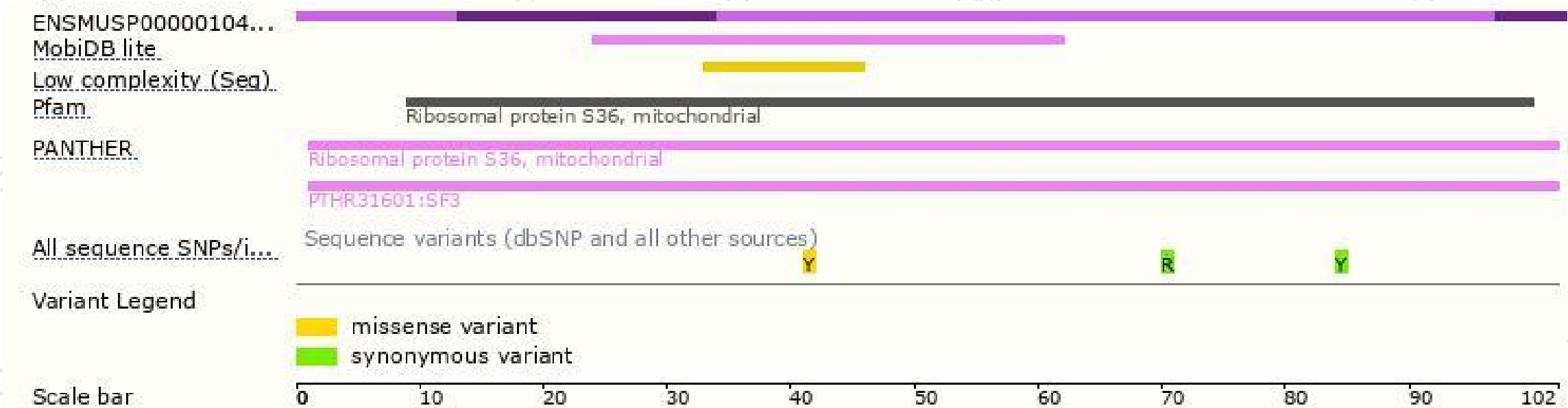
The strategy is based on the design of *Mrps36-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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