

***Dsn1* Cas9-KO Strategy**

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Project Overview

Project Name

Dsn1

Project type

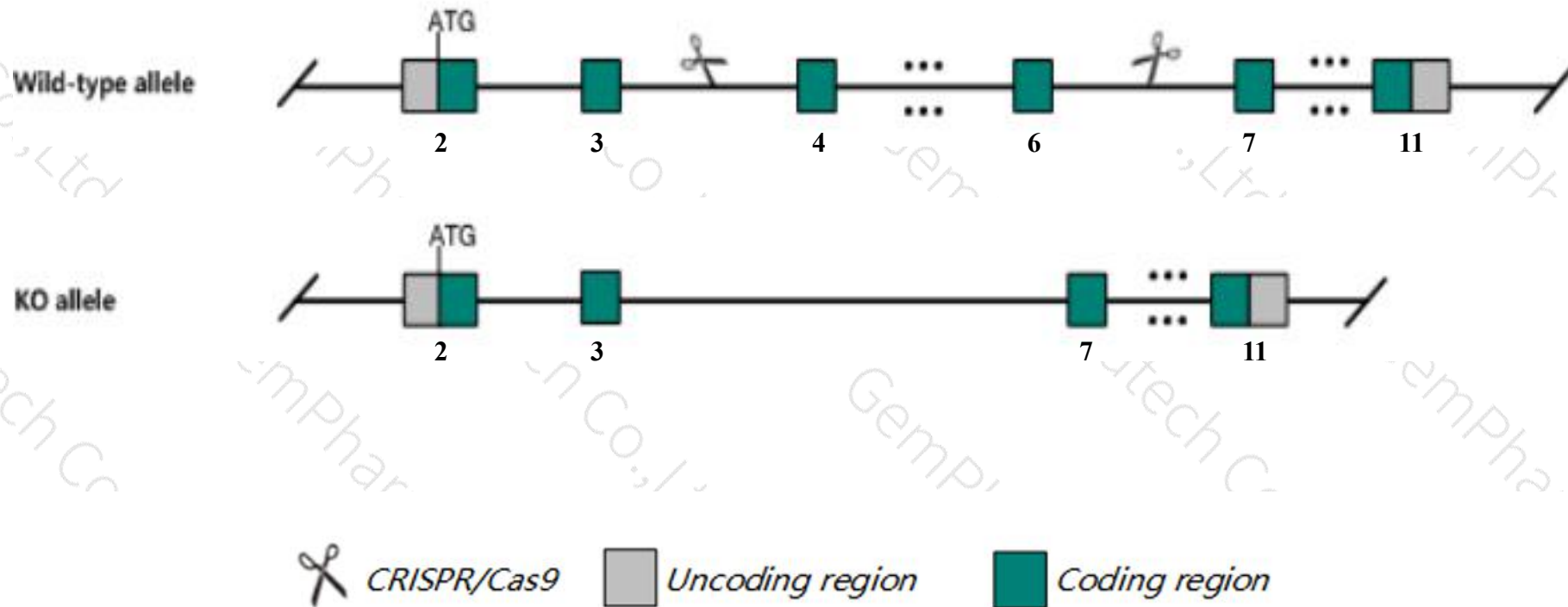
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dsn1* gene. The schematic diagram is as follows:



- The *Dsn1* gene has 6 transcripts. According to the structure of *Dsn1* gene, exon4-exon6 of *Dsn1*-202(ENSMUST00000103130.7) transcript is recommended as the knockout region. The region contains 238bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dsn1* 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 *Dsn1* gene is located on the Chr2. 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.
- The effect on transcript *Dsn1*-206 is unknown.
- 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)

Dsn1 DSN1 homolog, MIS12 kinetochore complex component [Mus musculus (house mouse)]

Gene ID: 66934, updated on 13-Mar-2020

Summary



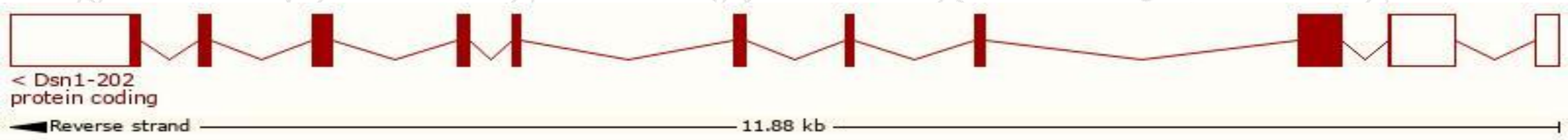
Official Symbol	Dsn1 provided by MGI
Official Full Name	DSN1 homolog, MIS12 kinetochore complex component provided by MGI
Primary source	MGI:MGI:1914184
See related	Ensembl:ENSMUSG00000027635
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700022L09Rik, AW552447
Expression	Broad expression in liver E14 (RPKM 10.6), CNS E11.5 (RPKM 9.4) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

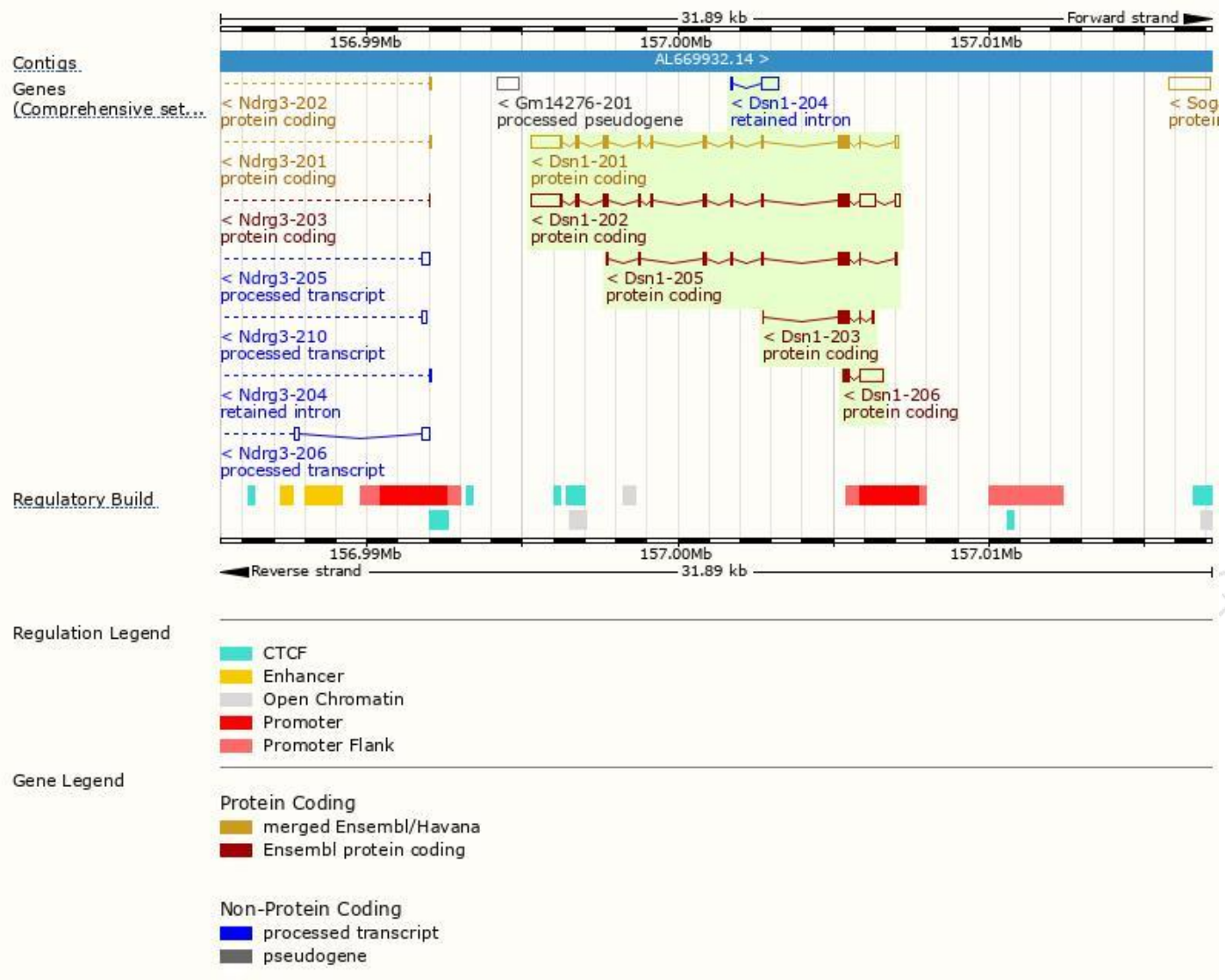
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dsn1-202	ENSMUST00000103130.7	2636	348aa	Protein coding	CCDS16972	Q9CYC5	TSL:1 GENCODE basic APPRIS P1
Dsn1-201	ENSMUST00000103129.8	2080	348aa	Protein coding	CCDS16972	Q9CYC5	TSL:1 GENCODE basic APPRIS P1
Dsn1-206	ENSMUST00000154213.1	899	65aa	Protein coding	-	B0QZT5	CDS 3' incomplete TSL:1
Dsn1-205	ENSMUST00000146413.7	753	232aa	Protein coding	-	A2ACV5	CDS 3' incomplete TSL:5
Dsn1-203	ENSMUST00000124671.1	415	124aa	Protein coding	-	B0QZT4	CDS 3' incomplete TSL:5
Dsn1-204	ENSMUST00000141388.1	639	No protein	Retained intron	-	-	TSL:5

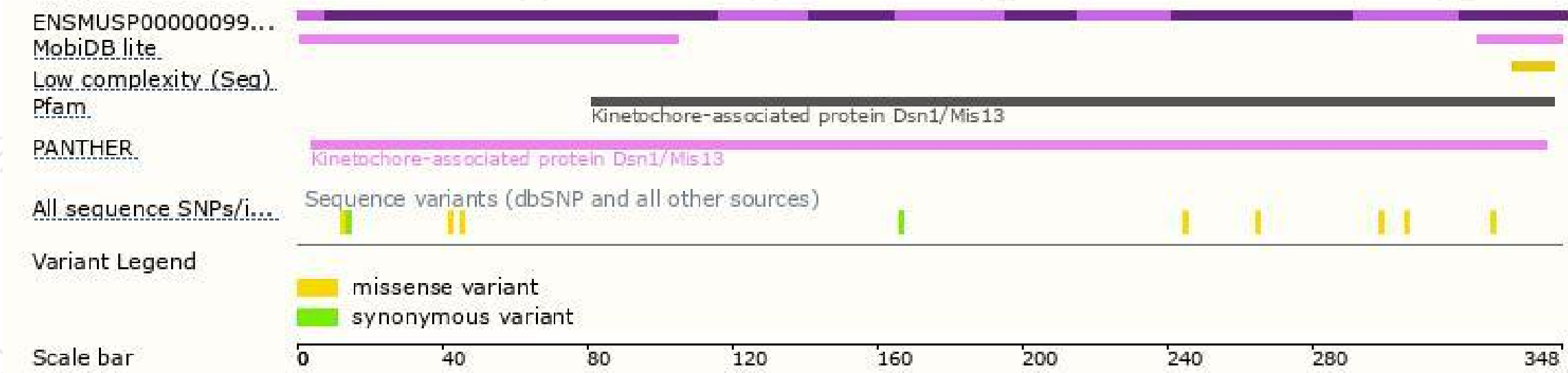
The strategy is based on the design of *Dsn1-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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