

Atp8b4 Cas9-KO Strategy

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Project Overview

Project Name

Atp8b4

Project type

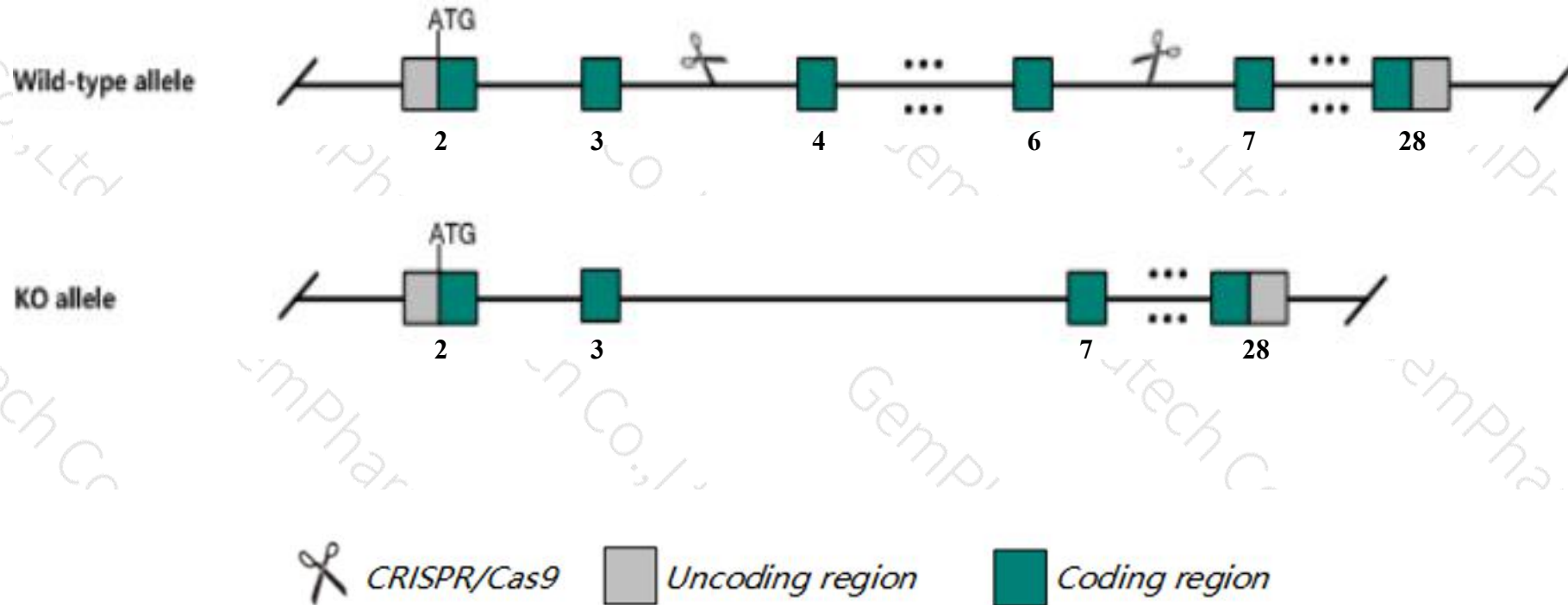
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp8b4* gene. The schematic diagram is as follows:



- The *Atp8b4* gene has 5 transcripts. According to the structure of *Atp8b4* gene, exon4-exon6 of *Atp8b4*-201(ENSMUST00000040128.11) transcript is recommended as the knockout region. The region contains 275bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp8b4* 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 *Atp8b4* 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.
- 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)

Atp8b4 ATPase, class I, type 8B, member 4 [Mus musculus (house mouse)]

Gene ID: 241633, updated on 13-Mar-2020

Summary



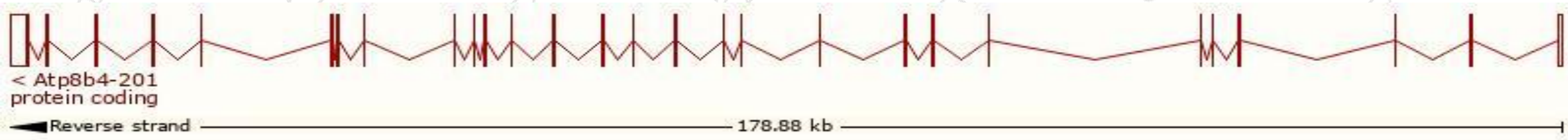
Official Symbol	Atp8b4 provided by MGI
Official Full Name	ATPase, class I, type 8B, member 4 provided by MGI
Primary source	MGI:MGI:1859664
See related	Ensembl:ENSMUSG00000060131
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Im
Expression	Biased expression in liver E18 (RPKM 2.3), liver E14 (RPKM 2.0) and 10 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

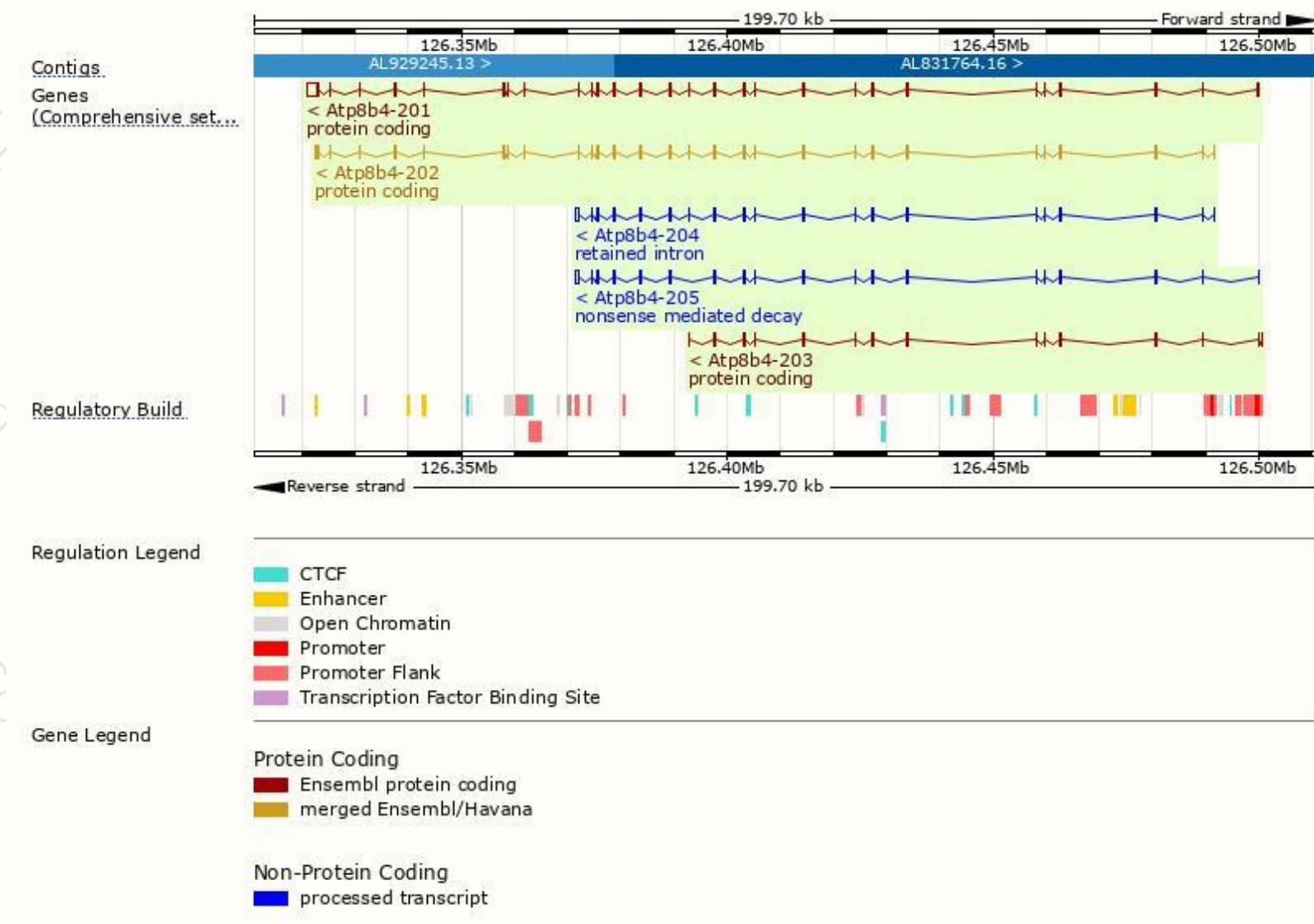
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp8b4-201	ENSMUST00000040128.11	5693	1194aa	Protein coding	CCDS50698	A2ANX3	TSL:5 GENCODE basic APPRIS P1
Atp8b4-202	ENSMUST00000040149.12	3986	1194aa	Protein coding	CCDS50698	A2ANX3	TSL:1 GENCODE basic APPRIS P1
Atp8b4-203	ENSMUST00000129187.1	1560	426aa	Protein coding	-	A2ANX2	CDS 3' incomplete TSL:1
Atp8b4-205	ENSMUST00000147517.7	2820	435aa	Nonsense mediated decay	-	F2Z411	TSL:1
Atp8b4-204	ENSMUST00000134977.7	2880	No protein	Retained intron	-	-	TSL:1

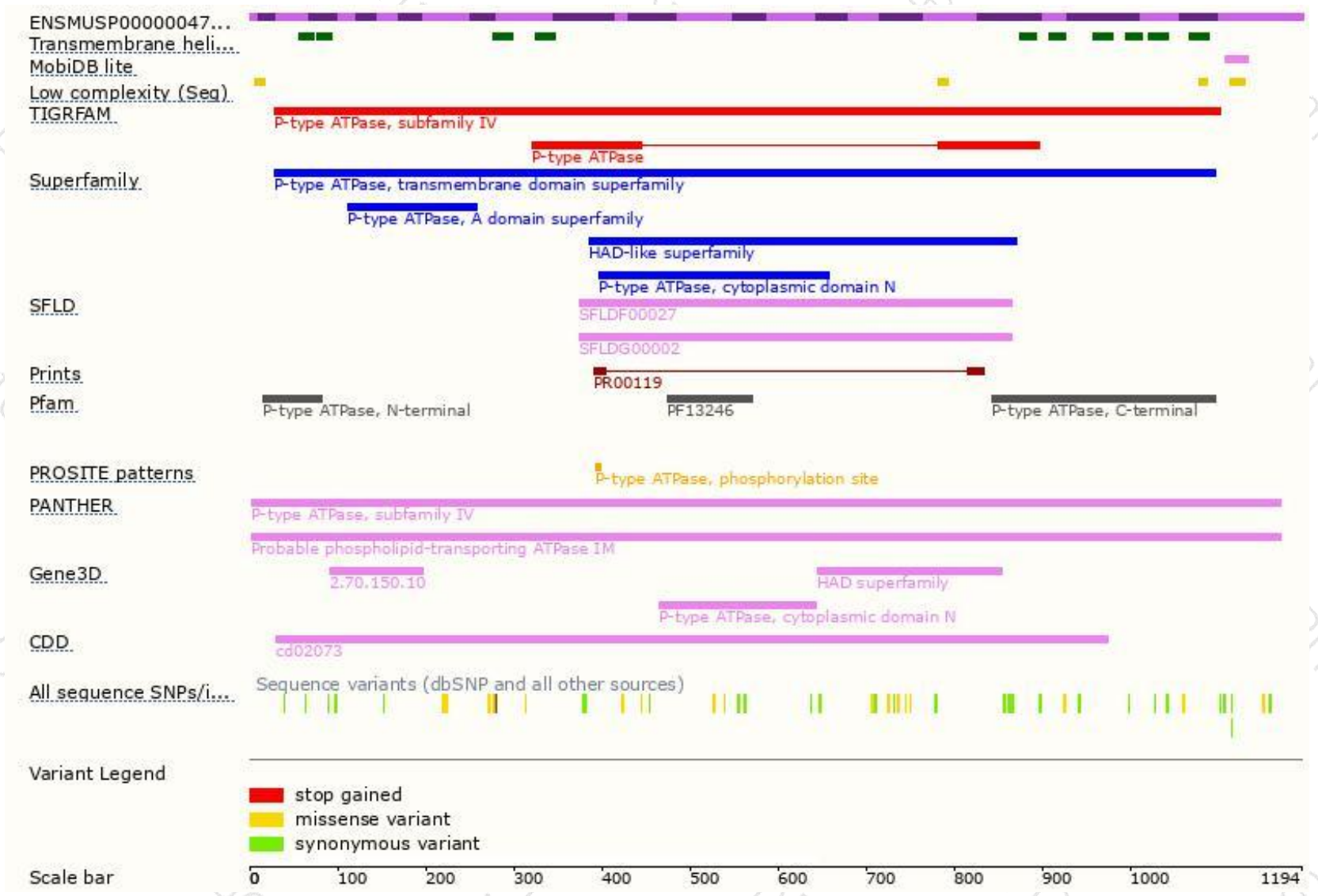
The strategy is based on the design of *Atp8b4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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