

Atp10b Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Xueting Zhang

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Project Overview

Project Name

Atp10b

Project type

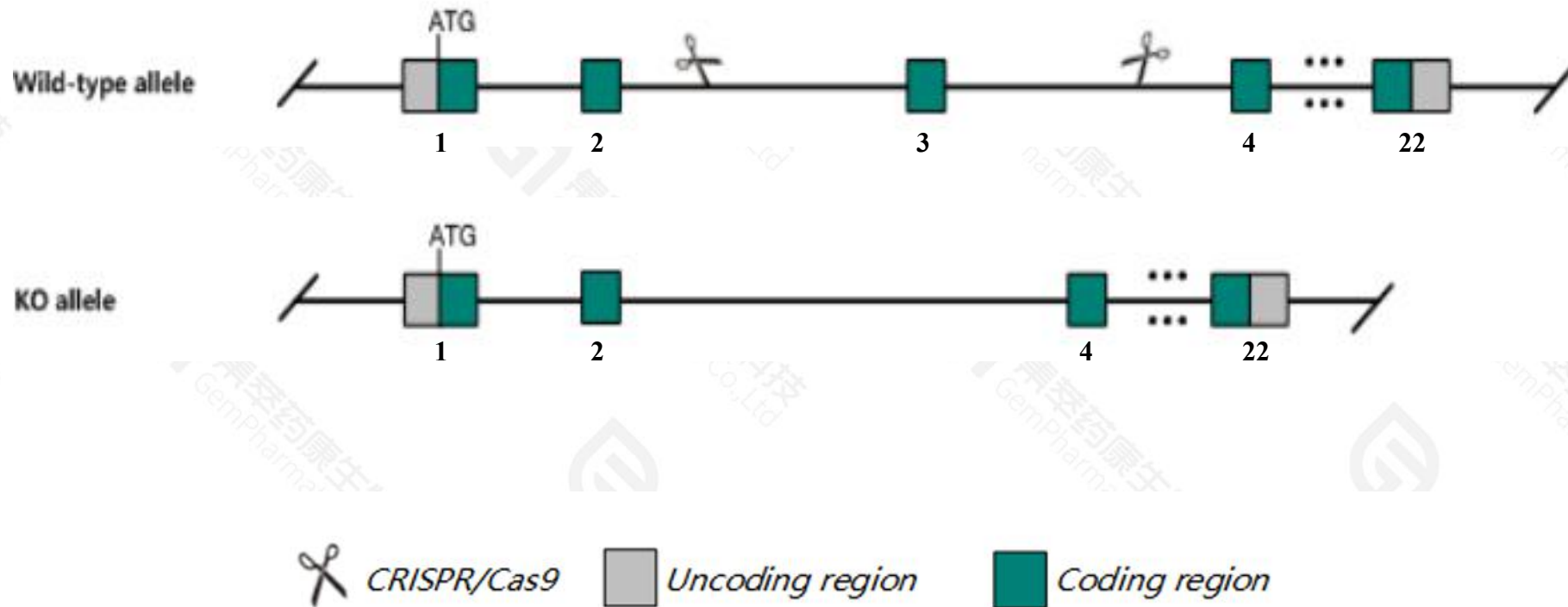
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp10b* gene. The schematic diagram is as follows:



- The *Atp10b* gene has 3 transcripts. According to the structure of *Atp10b* gene, exon3 of *Atp10b*-201(ENSMUST00000077659.6) transcript is recommended as the knockout region. The region contains 205bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp10b* 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 *Atp10b* gene is located on the Chr11. 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)

Atp10b ATPase, class V, type 10B [Mus musculus (house mouse)]

Gene ID: 319767, updated on 17-Dec-2020

Summary



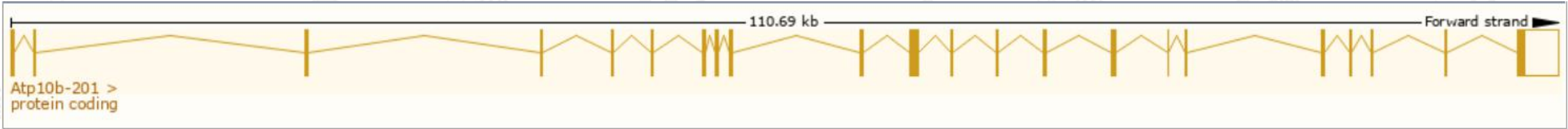
Official Symbol	Atp10b provided by MGI
Official Full Name	ATPase, class V, type 10B provided by MGI
Primary source	MGI:MGI:2442688
See related	Ensembl:ENSMUSG00000055415
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5930426O13Rik, 9030605H24Rik
Expression	Biased expression in genital fat pad adult (RPKM 11.0), large intestine adult (RPKM 9.6) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

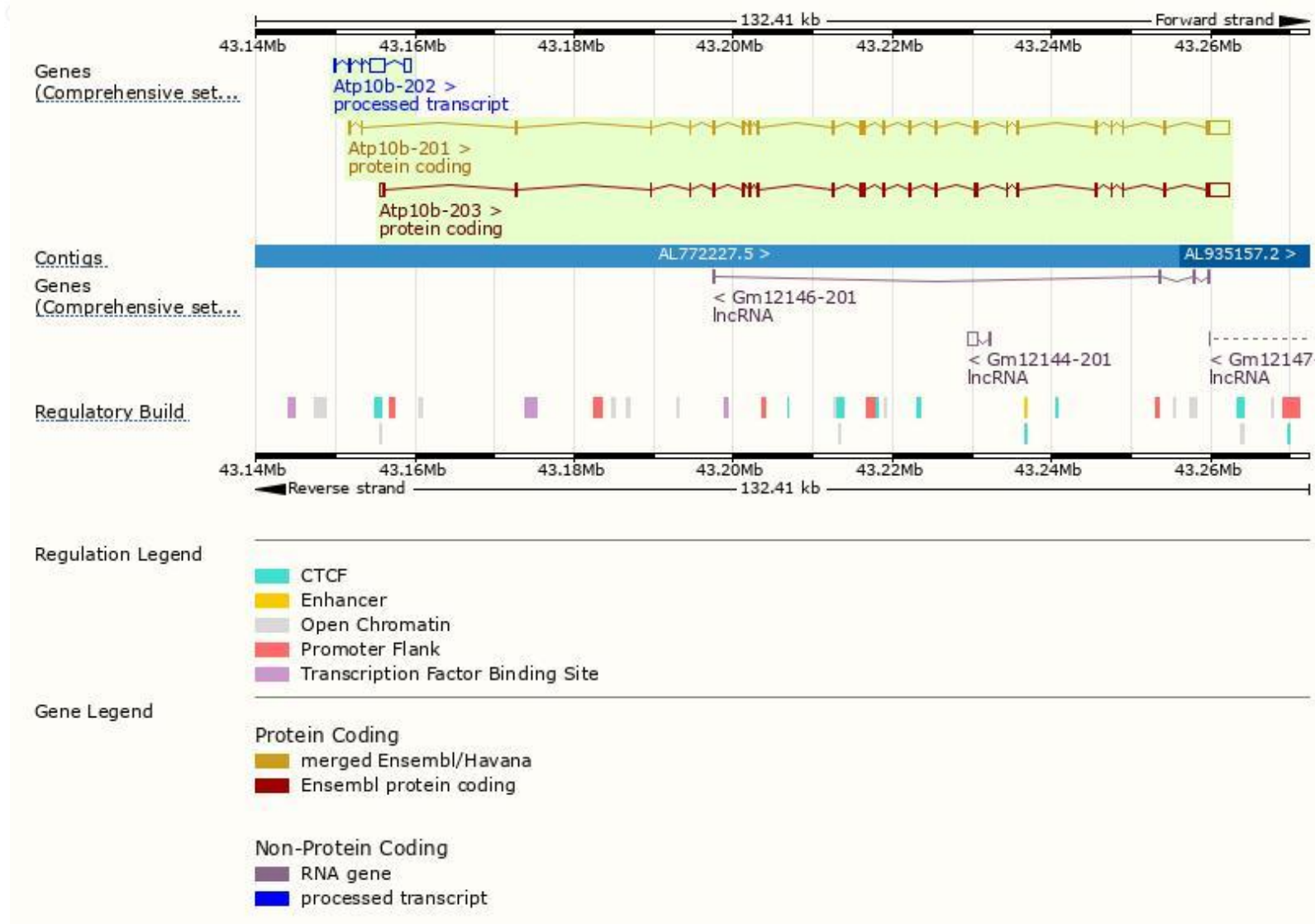
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp10b-201	ENSMUST00000077659.6	6825	1474aa	Protein coding	CCDS36129		TSL:5 , GENCODE basic , APPRIS P2 ,
Atp10b-203	ENSMUST00000238415.2	6949	1446aa	Protein coding	-		APPRIS ALT2 ,
Atp10b-202	ENSMUST00000148911.2	3477	No protein	Processed transcript	-		TSL:1 ,

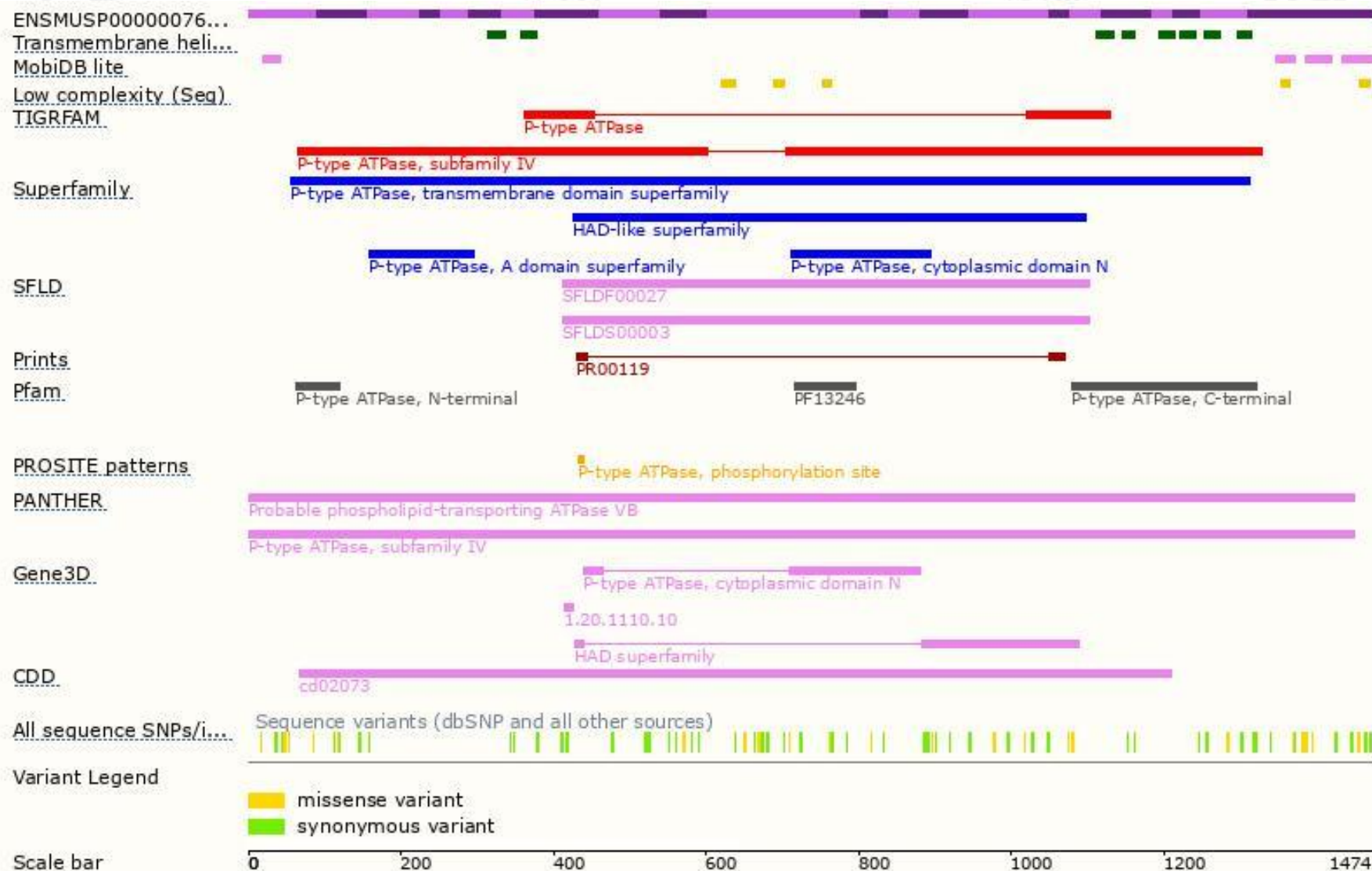
The strategy is based on the design of *Atp10b-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

