

Atp10a Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Atp10a

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp10a* gene. The schematic diagram is as follows:



- The *Atp10a* gene has 2 transcripts. According to the structure of *Atp10a* gene, exon2 of *Atp10a-201* (ENSMUST00000168747.2) 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 *Atp10a* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Disruption of this gene at the distal end of the p23DFiOD deletion may be responsible for the obesity phenotypes associated with that deletion.
- Transcript 202 CDS 3' incomplete the influences is unknown.
- The *Atp10a* gene is located on the Chr7. 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)

Atp10a ATPase, class V, type 10A [Mus musculus (house mouse)]

Gene ID: 11982, updated on 31-Jan-2019

Summary



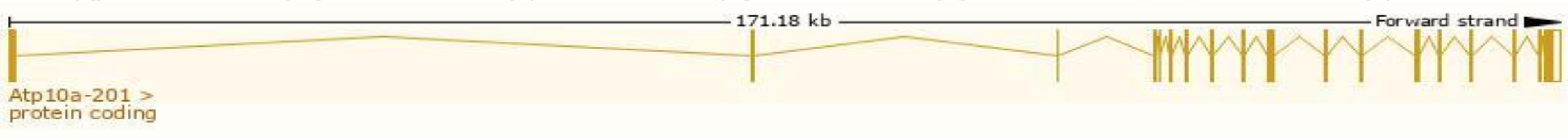
Official Symbol	Atp10a provided by MGI
Official Full Name	ATPase, class V, type 10A provided by MGI
Primary source	MGI:MGI:1330809
See related	Ensembl:ENSMUSG000000025324
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Atp10c, pfatp
Expression	Broad expression in thymus adult (RPKM 15.3), adrenal adult (RPKM 11.8) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

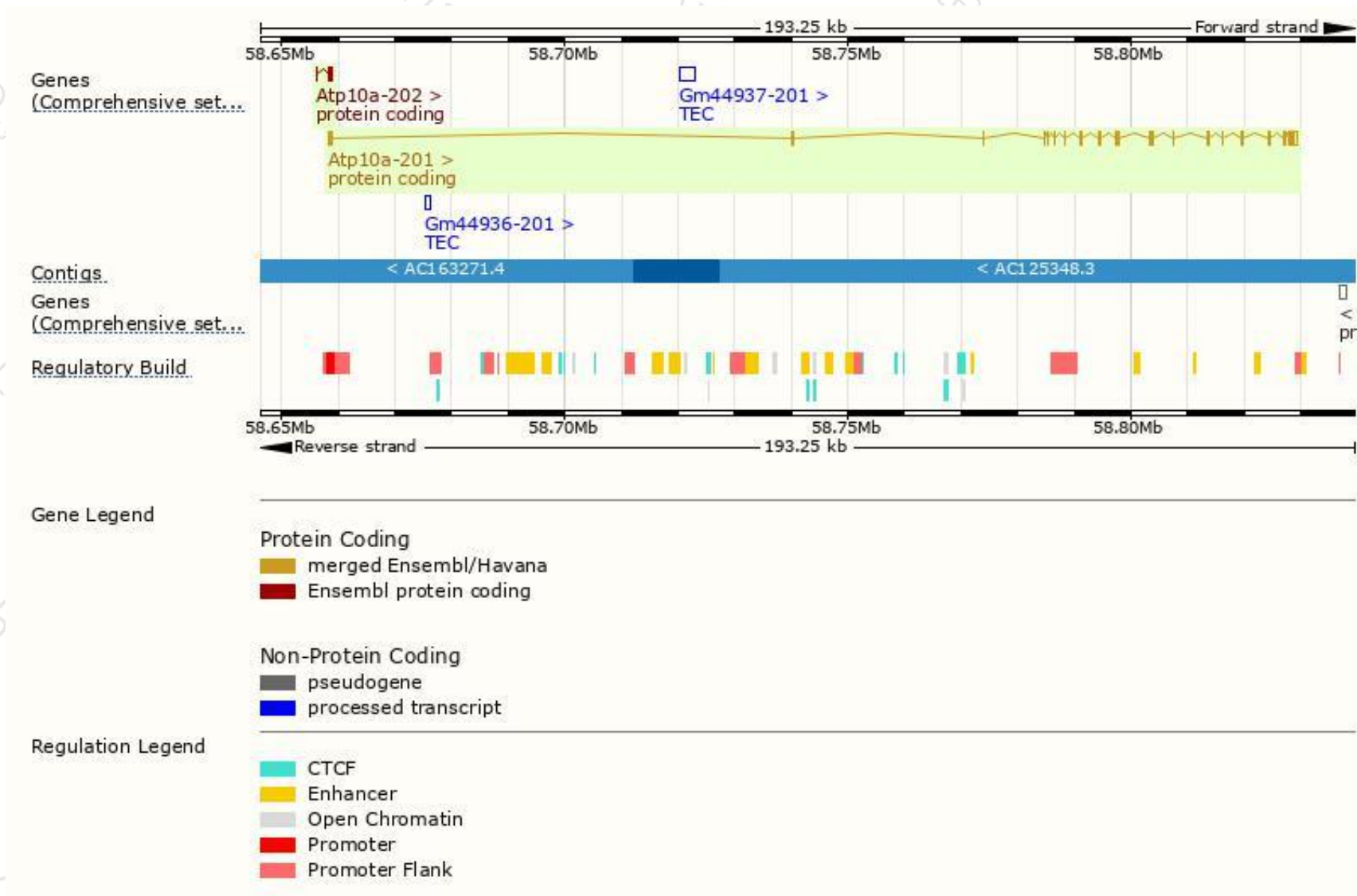
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp10a-201	ENSMUST00000168747.2	5419	1508aa	Protein coding	CCDS39972	Q54827 Q3V1Y7	TSL:1 GENCODE basic APPRIS P1
Atp10a-202	ENSMUST00000207668.1	688	141aa	Protein coding	-	A0A140LHF0	CDS 3' incomplete TSL:3

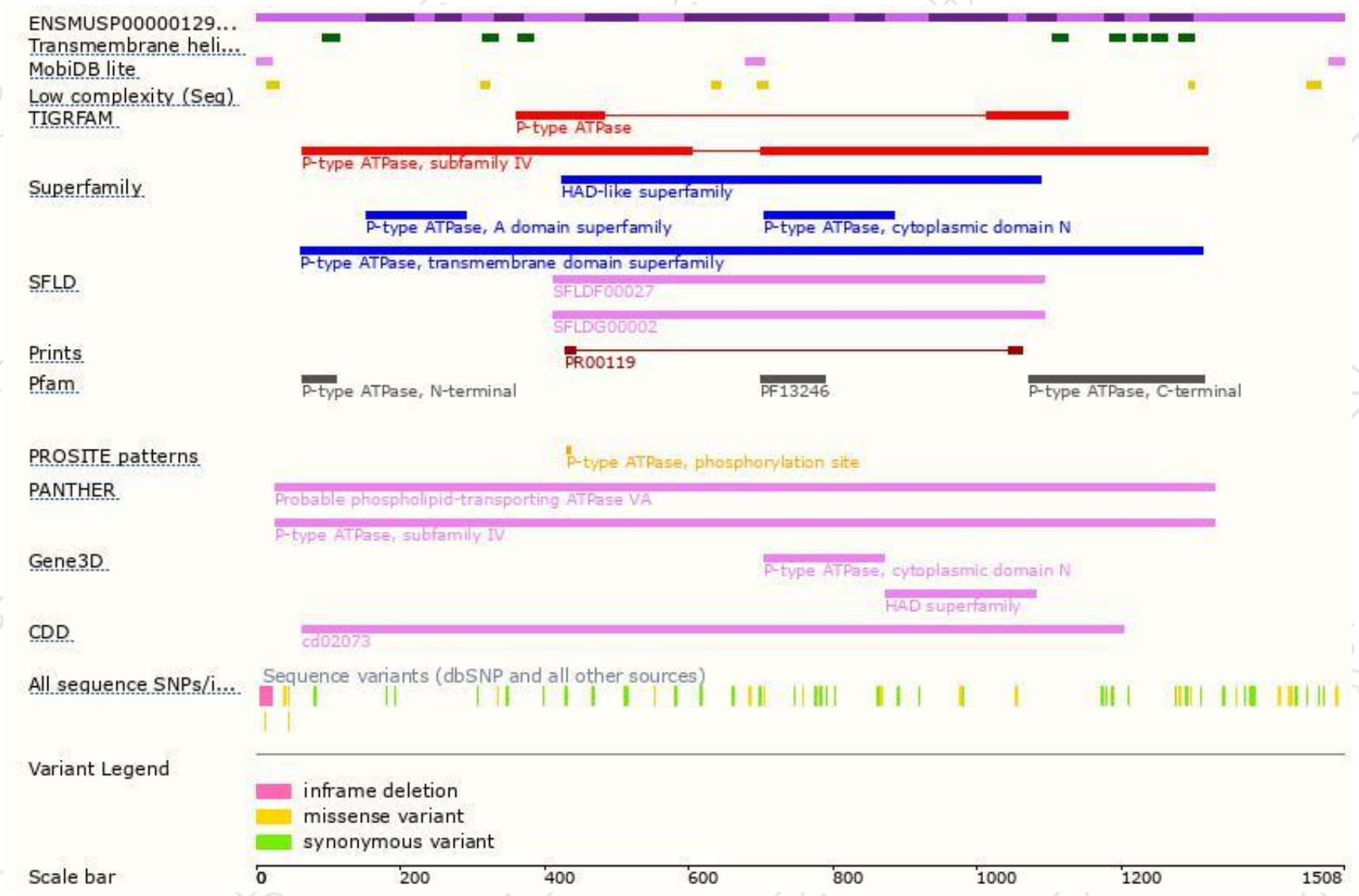
The strategy is based on the design of *Atp10a-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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