

Atp5k Cas9-KO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

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Project Overview

Project Name

Atp5k

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp5k* gene. The schematic diagram is as follows:



- The *Atp5k* gene has 3 transcripts. According to the structure of *Atp5k* gene, exon1-exon4 of *Atp5k-201* (ENSMUST00000049628.15) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp5k* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Atp5k* gene is located on the Chr5. 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)

Atp5k ATP synthase, H⁺ transporting, mitochondrial F1F0 complex, subunit E [Mus musculus (house mouse)]

Gene ID: 11958, updated on 2-Apr-2019

Summary



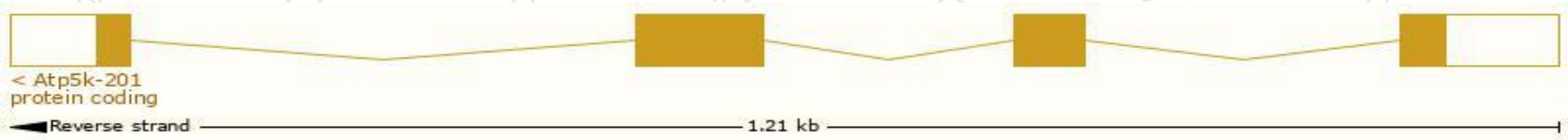
Official Symbol	Atp5k provided by MGI
Official Full Name	ATP synthase, H ⁺ transporting, mitochondrial F1F0 complex, subunit E provided by MGI
Primary source	MGI:MGI:106636
See related	Ensembl:ENSMUSG00000050856
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610008D24Rik, Atp5i, Atp5me, Lfm1
Expression	Ubiquitous expression in placenta adult (RPKM 62.8), heart adult (RPKM 59.6) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

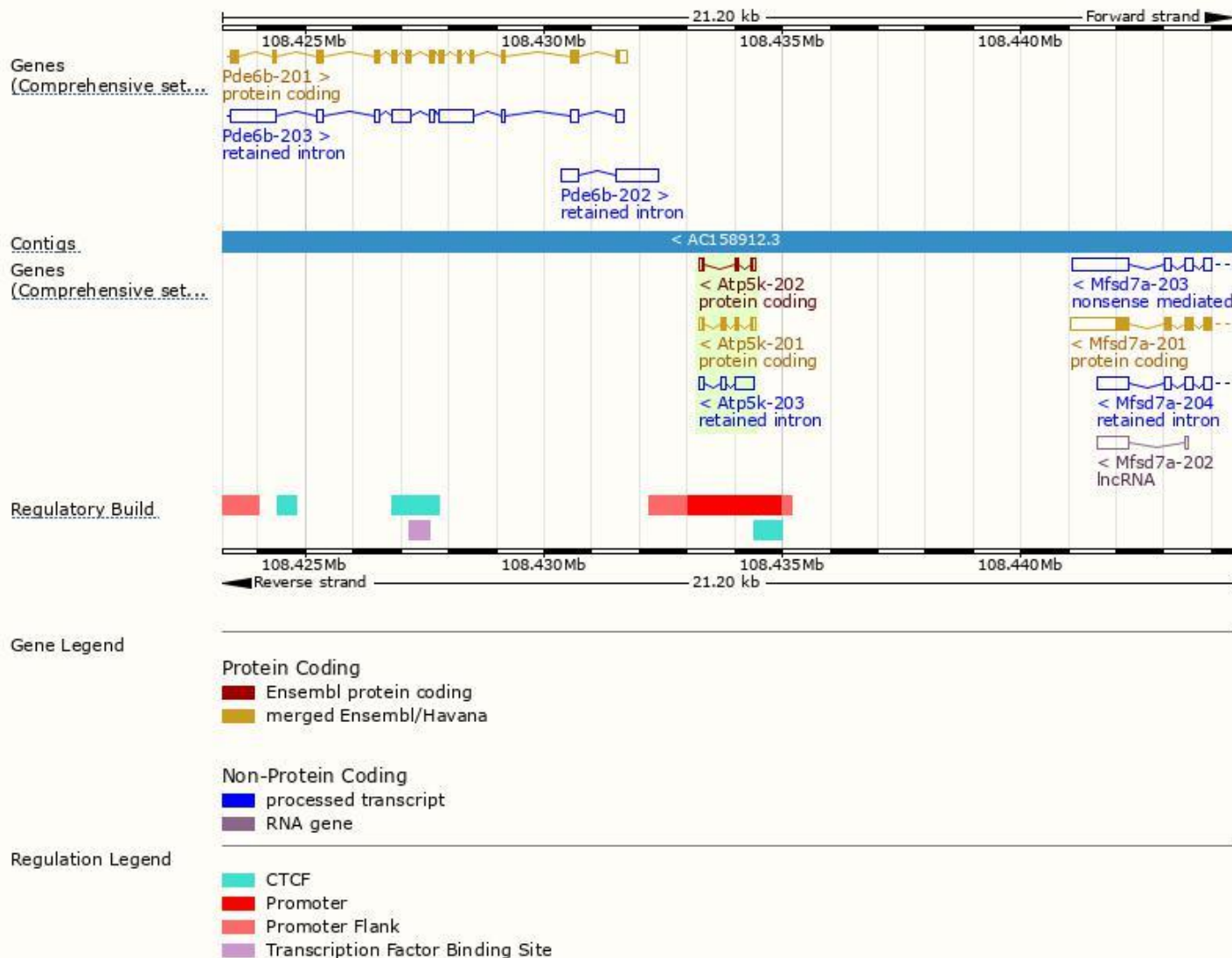
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp5k-201	ENSMUST00000049628.15	371	71aa	Protein coding	CCDS39204	Q06185	TSL:1 GENCODE basic APPRIS P1
Atp5k-202	ENSMUST00000118632.1	272	38aa	Protein coding	-	Q8BTB6	TSL:1 GENCODE basic
Atp5k-203	ENSMUST00000123184.1	563	No protein	Retained intron	-	-	TSL:2

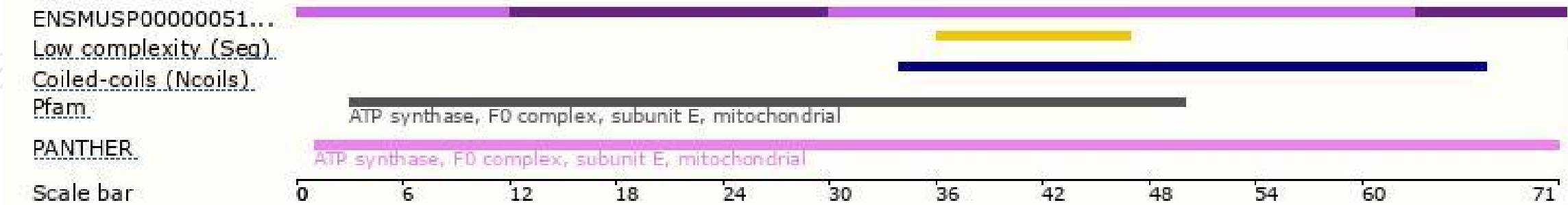
The strategy is based on the design of *Atp5k-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

