

Atp5j2 Cas9-CKO Strategy

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Project Overview

Project Name

Atp5j2

Project type

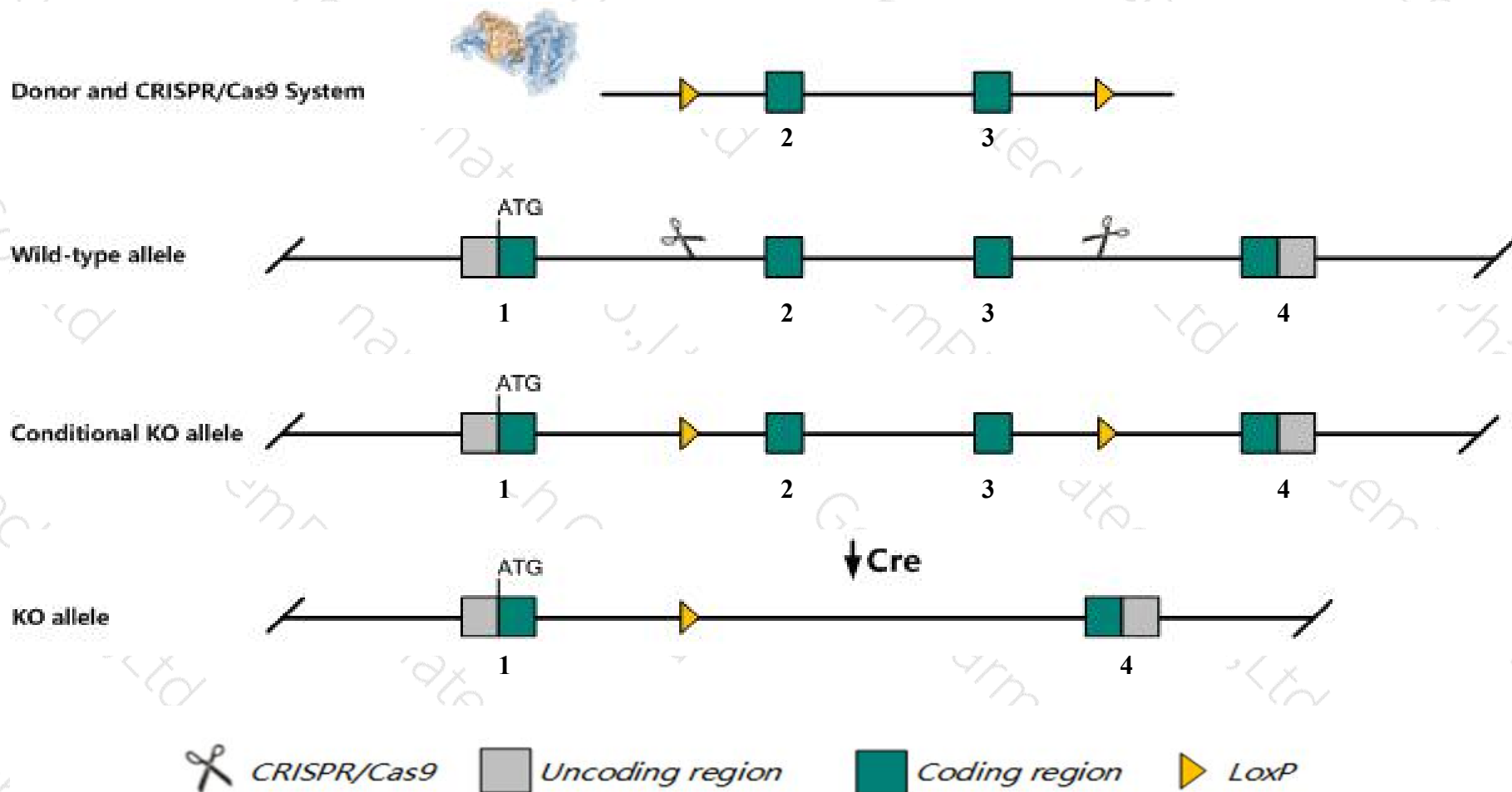
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp5j2* gene. The schematic diagram is as follows:



- The *Atp5j2* gene has 5 transcripts. According to the structure of *Atp5j2* gene, exon2-exon3 of *Atp5j2-202* (ENSMUST00000161741.7) transcript is recommended as the knockout region. The region contains most 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 *Atp5j2* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Atp5j2* 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.
- The KO region deletes most of the coding sequence, but does not result in frameshift.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Atp5j2 ATP synthase, H⁺ transporting, mitochondrial F0 complex, subunit F2 [*Mus musculus* (house mouse)]

Gene ID: 57423, updated on 3-May-2020

Summary

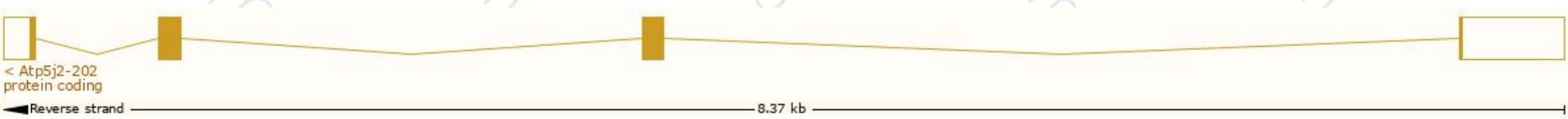
Official Symbol	Atp5j2 provided by MGI
Official Full Name	ATP synthase, H ⁺ transporting, mitochondrial F0 complex, subunit F2 provided by MGI
Primary source	MGI:MGI:1927558
See related	Ensembl:ENSMUSG00000038690
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Atp5mf, 1110019H14Rik
Expression	Ubiquitous expression in heart adult (RPKM 396.0), kidney adult (RPKM 214.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

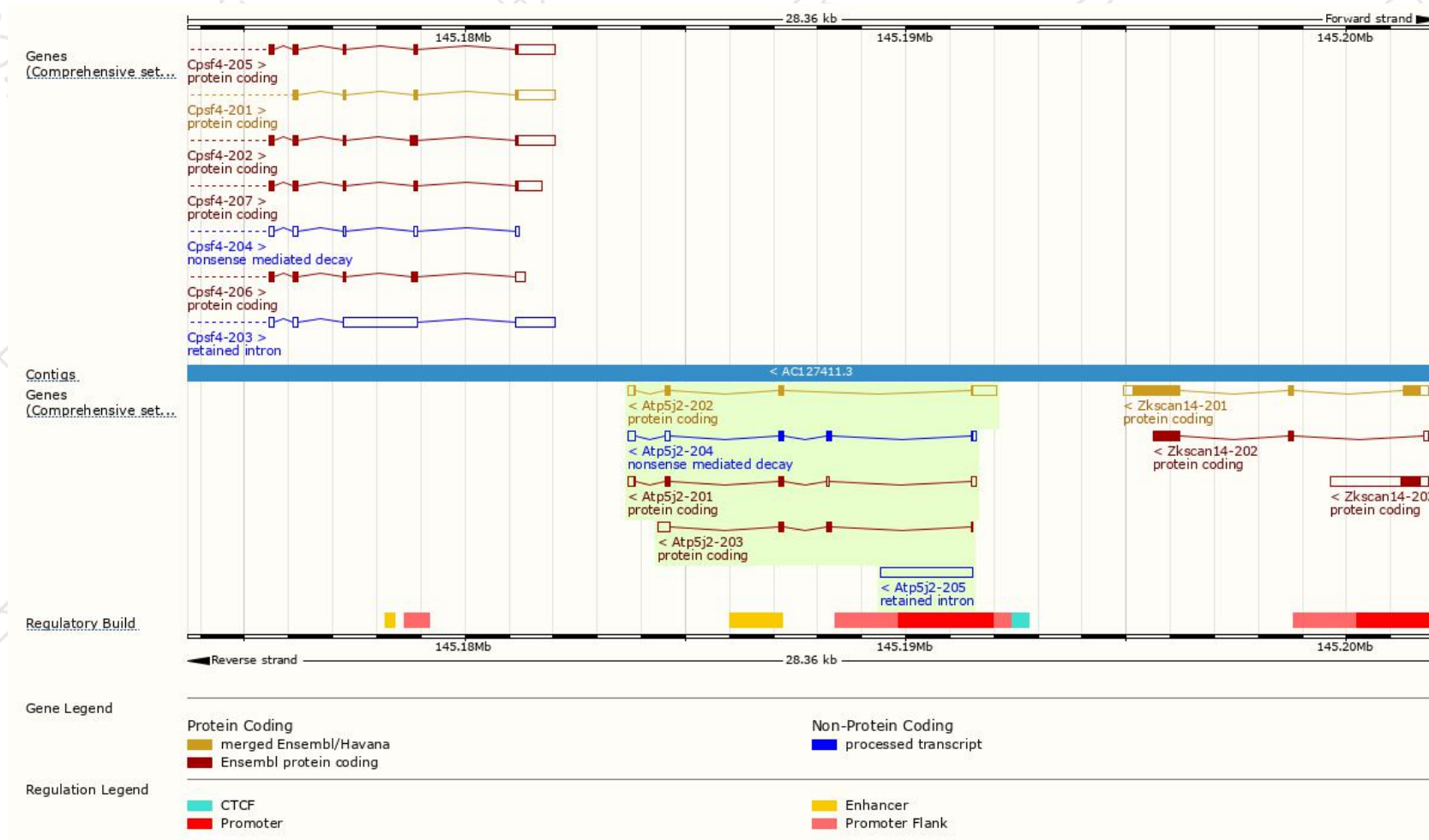
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp5j2-202	ENSMUST00000161741.7	955	88aa	Protein coding	CCDS39385	P56135	TSL:1 GENCODE basic APPRIS P1
Atp5j2-201	ENSMUST00000037056.8	540	76aa	Protein coding	-	F8WHP8	TSL:5 GENCODE basic
Atp5j2-203	ENSMUST00000161845.1	510	84aa	Protein coding	-	F6USF4	CDS 5' incomplete TSL:5
Atp5j2-204	ENSMUST00000162360.7	607	85aa	Nonsense mediated decay	-	M0QWW1	TSL:2
Atp5j2-205	ENSMUST00000200584.1	2101	No protein	Retained intron	-	-	TSL:NA

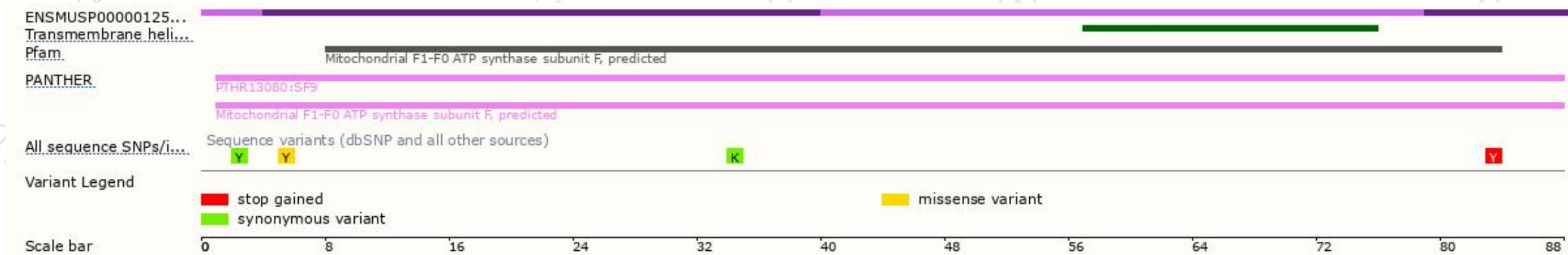
The strategy is based on the design of *Atp5j2-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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