

Atp2c2 Cas9-KO Strategy

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Project Overview

Project Name

Atp2c2

Project type

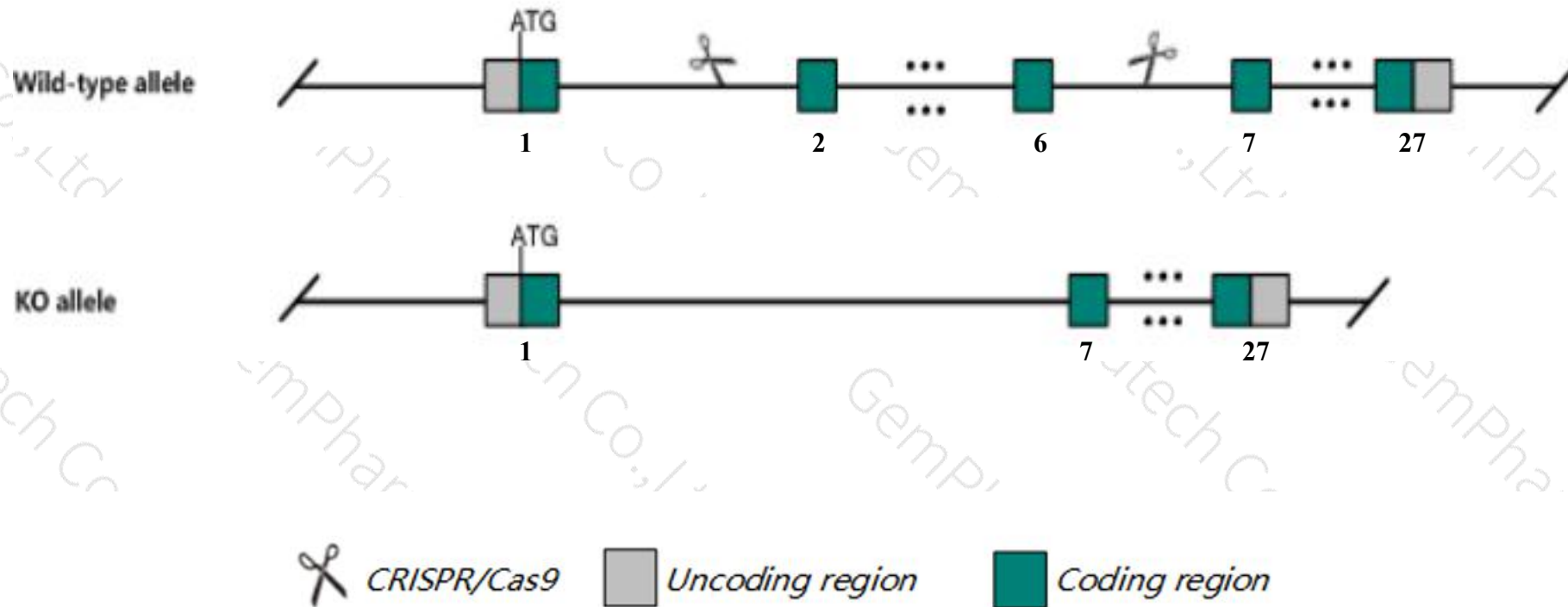
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp2c2* gene. The schematic diagram is as follows:



- The *Atp2c2* gene has 2 transcripts. According to the structure of *Atp2c2* gene, exon2-exon6 of *Atp2c2-201* (ENSMUST00000095171.4) transcript is recommended as the knockout region. The region contains 416bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp2c2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Atp2c2* gene is located on the Chr8. 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)

Atp2c2 ATPase, Ca⁺⁺ transporting, type 2C, member 2 [Mus musculus (house mouse)]

Gene ID: 69047, updated on 13-Mar-2020

Summary



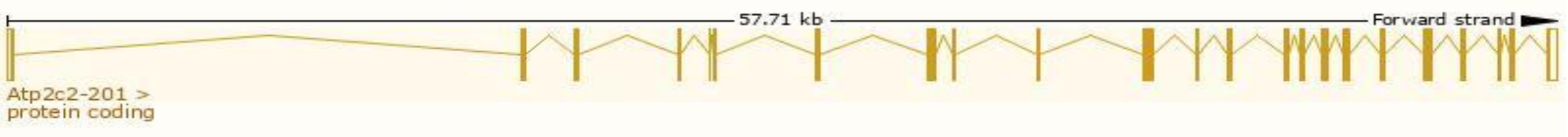
Official Symbol	Atp2c2 provided by MGI
Official Full Name	ATPase, Ca ⁺⁺ transporting, type 2C, member 2 provided by MGI
Primary source	MGI:MGI:1916297
See related	Ensembl:ENSMUSG000000034112
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810010G06Rik, Spca2, mKIAA0703
Expression	Biased expression in colon adult (RPKM 32.1), large intestine adult (RPKM 4.2) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

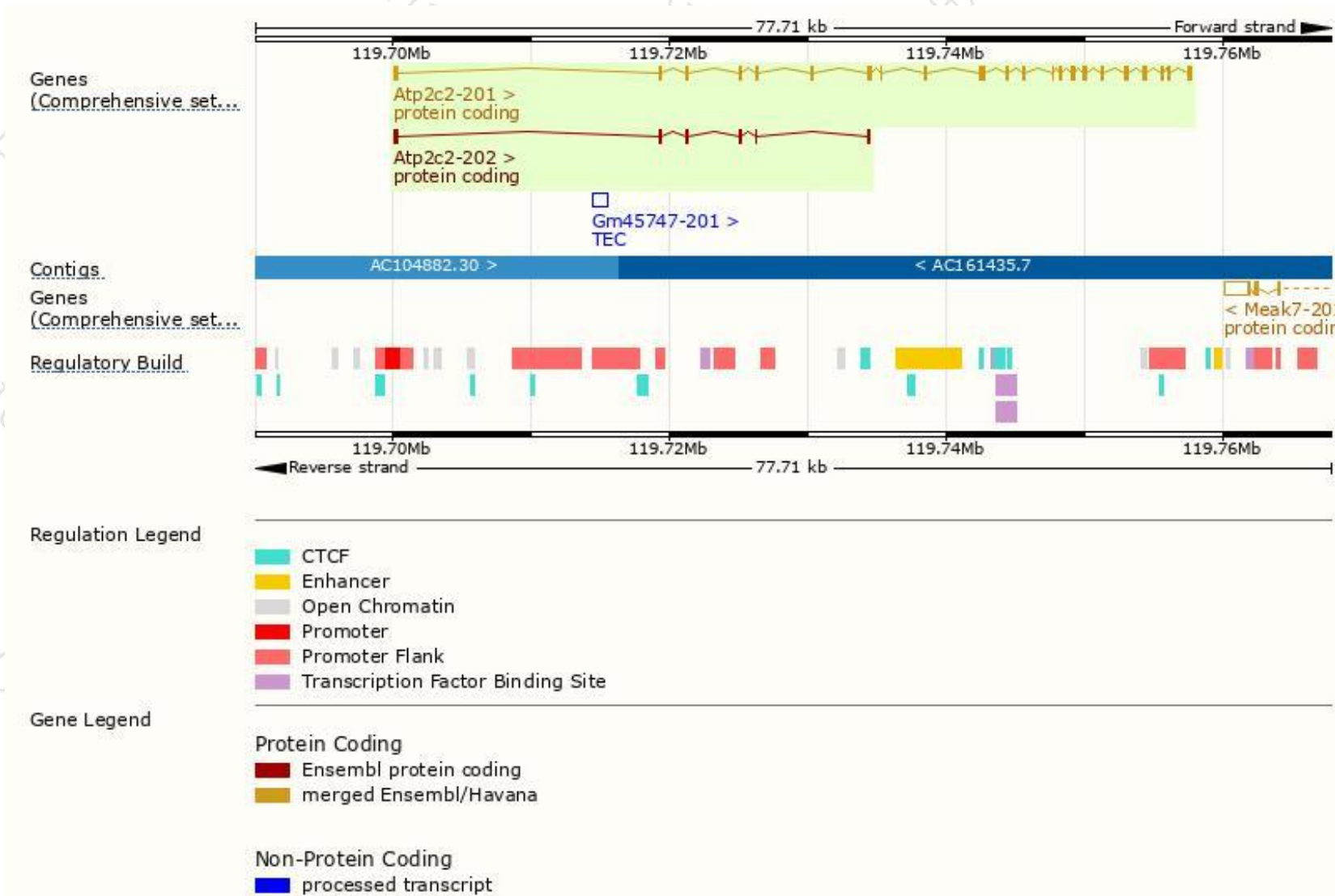
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp2c2-201	ENSMUST00000095171.4	3222	944aa	Protein coding	CCDS52684	A7L9Z8	TSL:1 GENCODE basic APPRIS P1
Atp2c2-202	ENSMUST00000212454.1	623	176aa	Protein coding	-	A0A1D5RM13	CDS 3' incomplete TSL:3

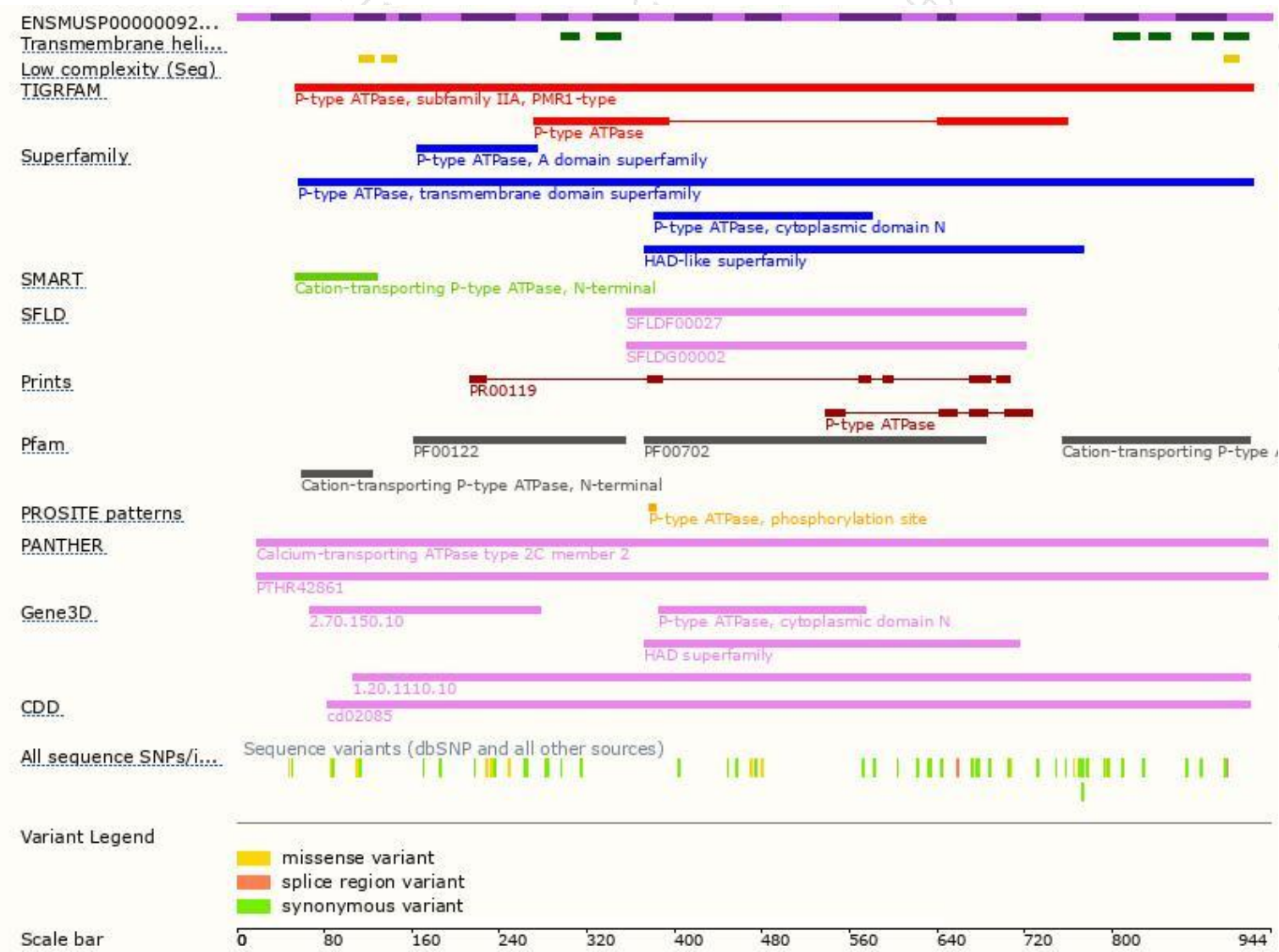
The strategy is based on the design of *Atp2c2-201* transcript,the transcription is shown below:



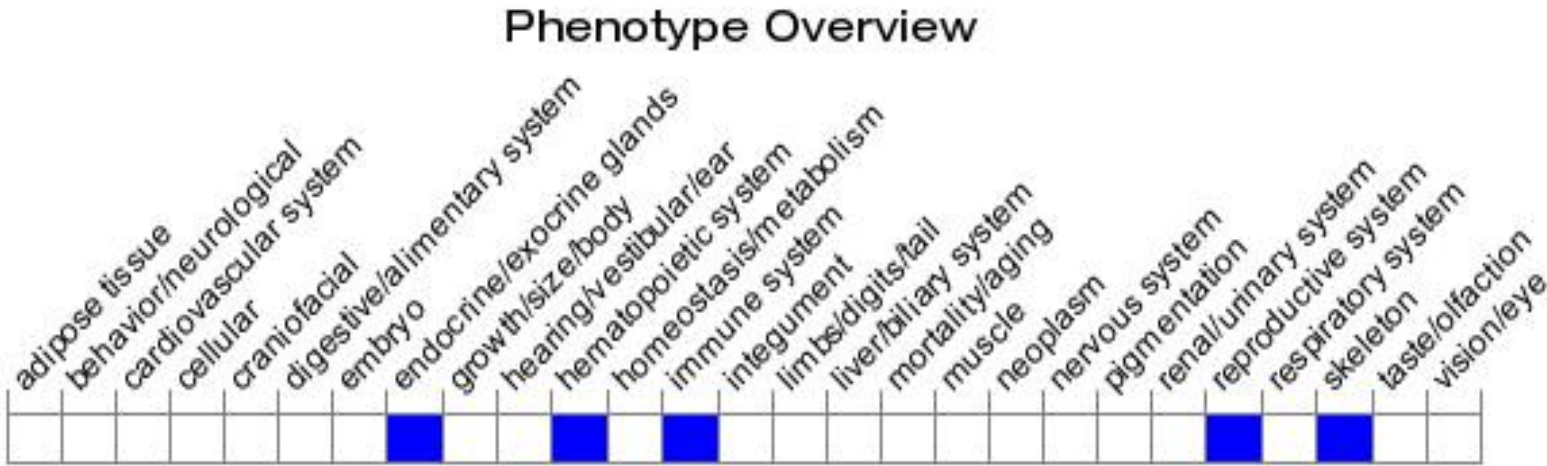
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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