

Vps4b Cas9-KO Strategy

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Project Overview

Project Name

Vps4b

Project type

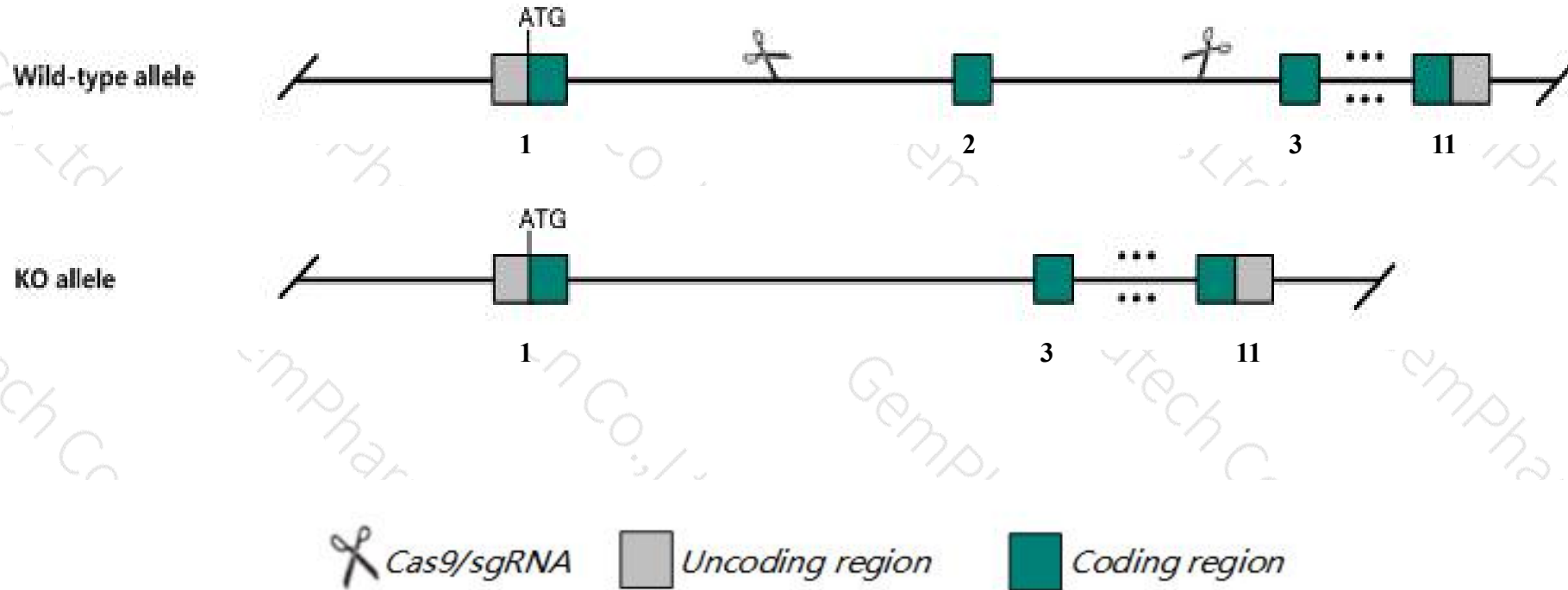
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vps4b* gene. The schematic diagram is as follows:



Technical routes

- The *Vps4b* gene has 6 transcripts. According to the structure of *Vps4b* gene, exon2 of *Vps4b-201* (ENSMUST00000094646.5) transcript is recommended as the knockout region. The region contains 112bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vps4b* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Vps4b* gene is located on the Chr1. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Vps4b vacuolar protein sorting 4B [Mus musculus (house mouse)]

Gene ID: 20479, updated on 31-Jan-2019

Summary



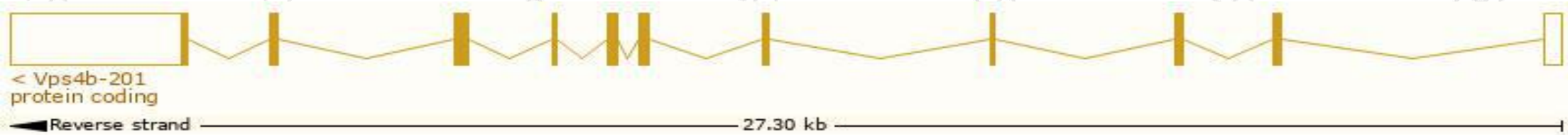
Official Symbol	Vps4b provided by MGI
Official Full Name	vacuolar protein sorting 4B provided by MGI
Primary source	MGI:MGI:1100499
See related	Ensembl:ENSMUSG00000009907
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	8030489C12Rik, Skd1
Expression	Ubiquitous expression in bladder adult (RPKM 17.1), placenta adult (RPKM 16.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

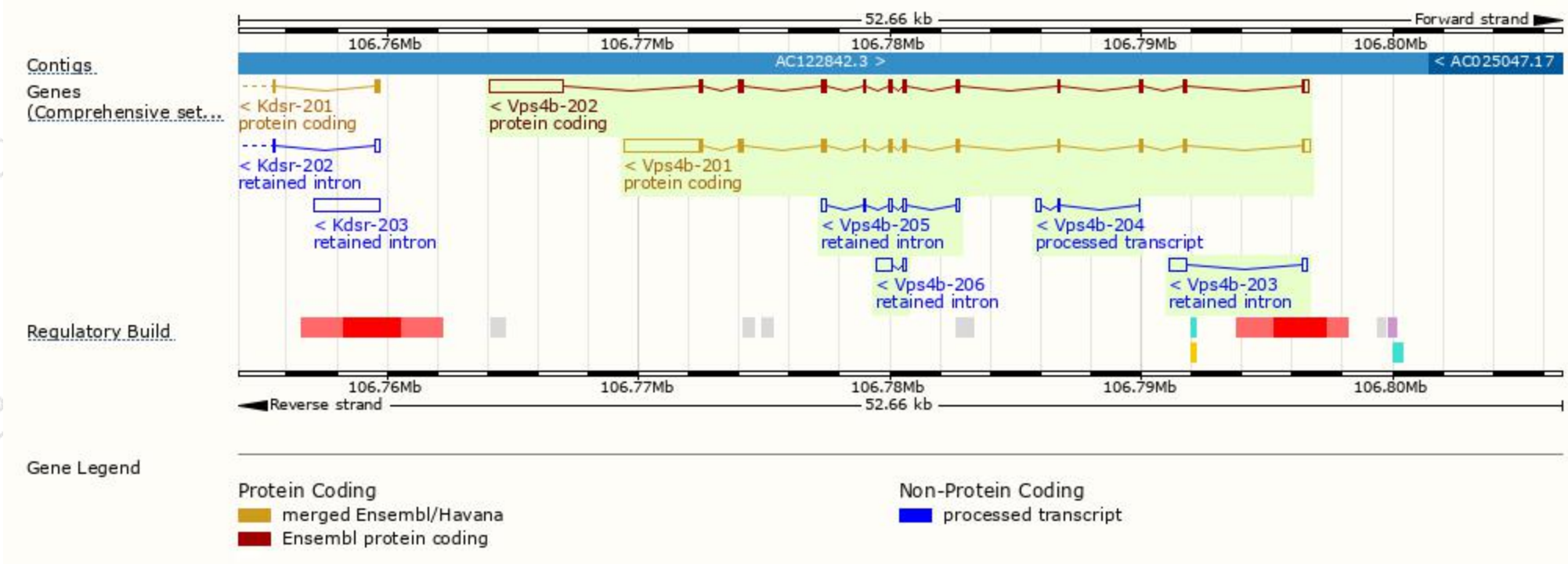
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vps4b-201	ENSMUST00000094646.5	4633	444aa	Protein coding	CCDS15211	P46467 Q3TN07	TSL:1 GENCODE basic APPRIS P1
Vps4b-202	ENSMUST00000112736.7	4539	444aa	Protein coding	CCDS15211	P46467 Q3TN07	TSL:1 GENCODE basic APPRIS P1
Vps4b-204	ENSMUST00000127606.1	314	No protein	Processed transcript	-	-	TSL:5
Vps4b-203	ENSMUST00000126057.1	847	No protein	Retained intron	-	-	TSL:2
Vps4b-206	ENSMUST00000190531.1	791	No protein	Retained intron	-	-	TSL:2
Vps4b-205	ENSMUST00000147705.1	709	No protein	Retained intron	-	-	TSL:2

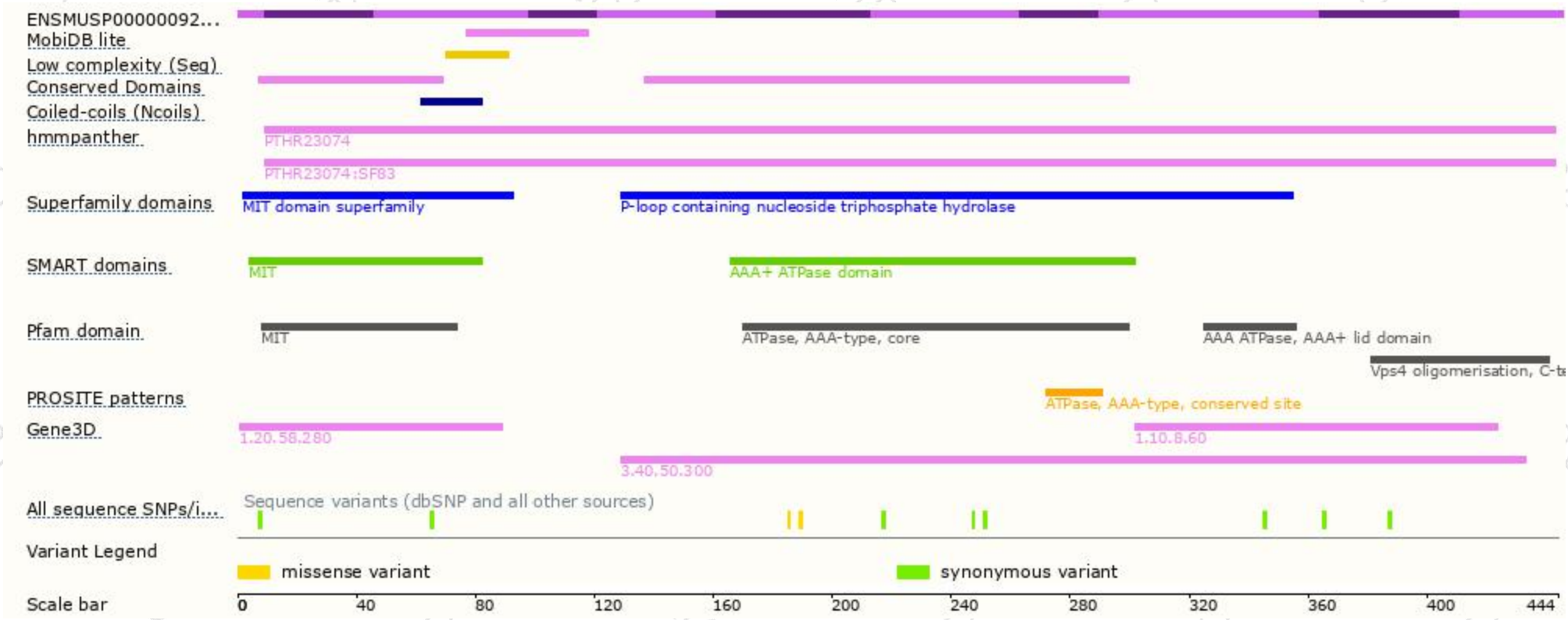
The strategy is based on the design of *Vps4b-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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