

Vps72 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Vps72

Project type

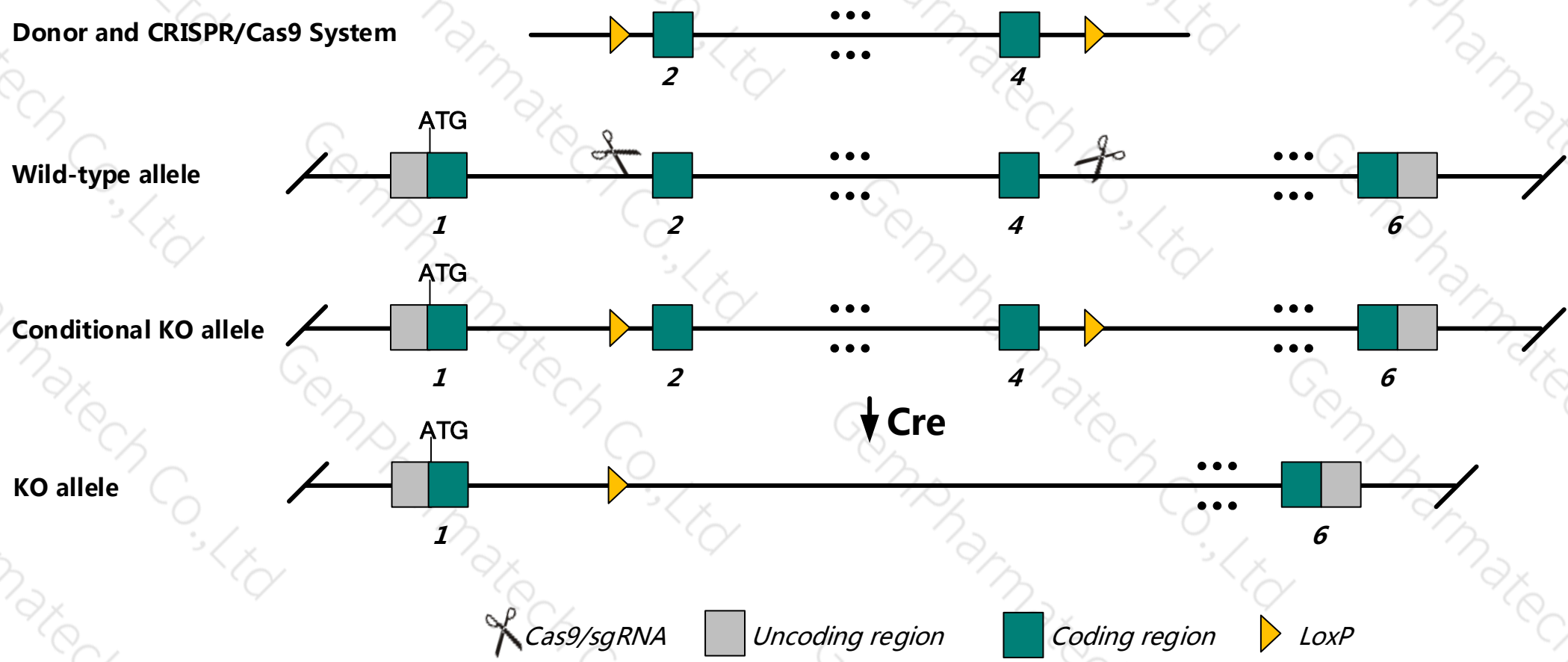
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vps72* gene. The schematic diagram is as follows:



- The *Vps72* gene has 5 transcripts. According to the structure of *Vps72* gene, exon2-exon4 of *Vps72*-201 (ENSMUST00000009102.8) transcript is recommended as the knockout region. The region contains 445bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vps72* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- The *Vps72* gene is located on the Chr3. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Vps72 vacuolar protein sorting 72 [*Mus musculus* (house mouse)]

Gene ID: 21427, updated on 2-Oct-2018

Summary

Official Symbol Vps72 provided by [MGI](#)

Official Full Name vacuolar protein sorting 72 provided by [MGI](#)

Primary source [MGI:MGI:1202305](#)

See related [Ensembl:ENSMUSG000000008958](#) [Vega:OTTMUSG000000019665](#)

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 YL-1; Tcfl1

Expression Ubiquitous expression in CNS E11.5 (RPKM 52.7), CNS E14 (RPKM 42.9) and 28 other tissues [See more](#)

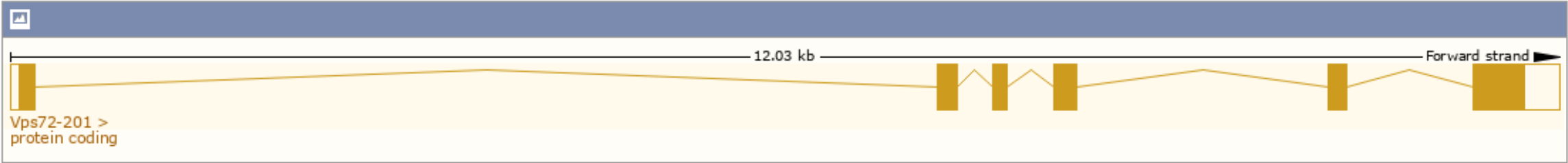
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

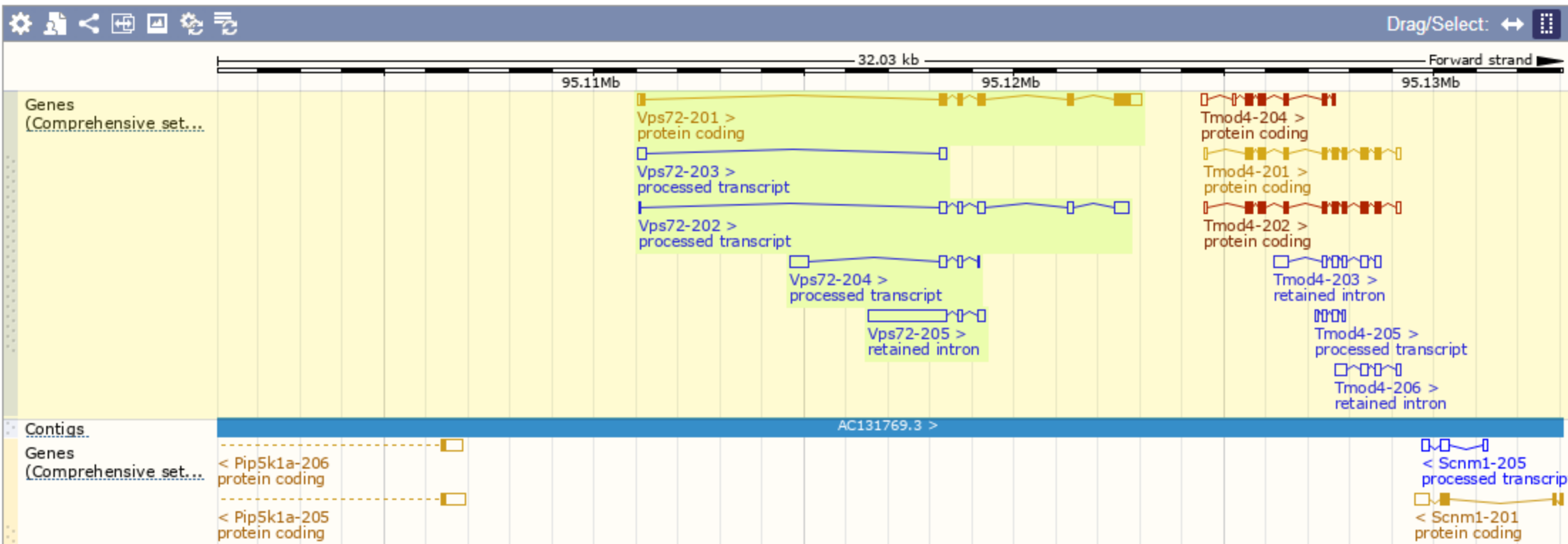
The gene has 5 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden) Filter								
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Vps72-201	ENSMUST00000009102.8	1456	368aa	Protein coding	CCDS38543	Q62481	NM_009336 NP_033362	TSL:1 Gencode basic APPRIS P1
Vps72-202	ENSMUST00000125548.7	956	No protein	Processed transcript	-	-	-	TSL:5
Vps72-204	ENSMUST00000139296.7	770	No protein	Processed transcript	-	-	-	TSL:3
Vps72-203	ENSMUST00000136076.7	361	No protein	Processed transcript	-	-	-	TSL:3
Vps72-205	ENSMUST00000152333.1	2139	No protein	Retained intron	-	-	-	TSL:3

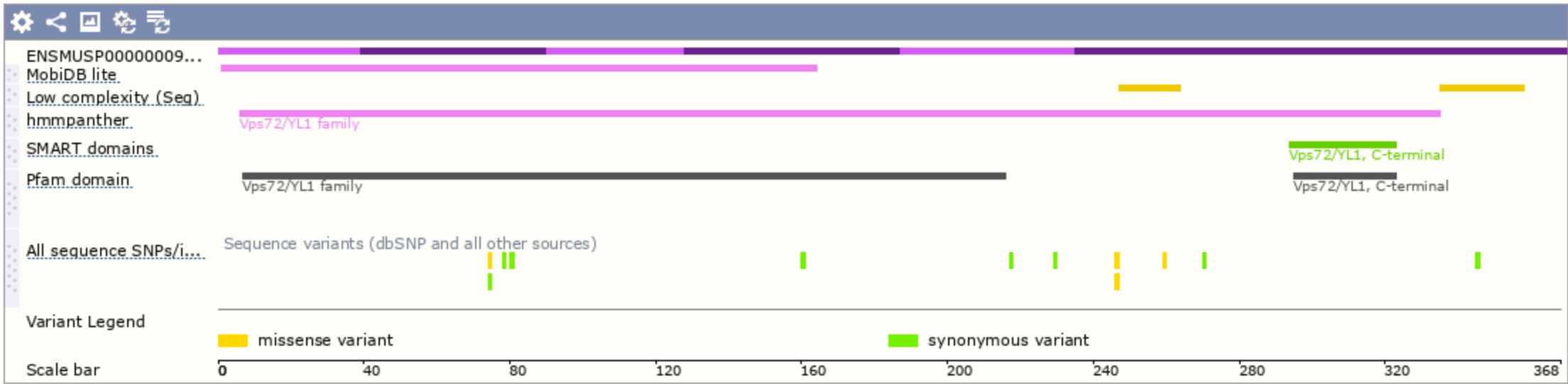
The strategy is based on the design of Vps72-201 transcript, The transcription is shown below



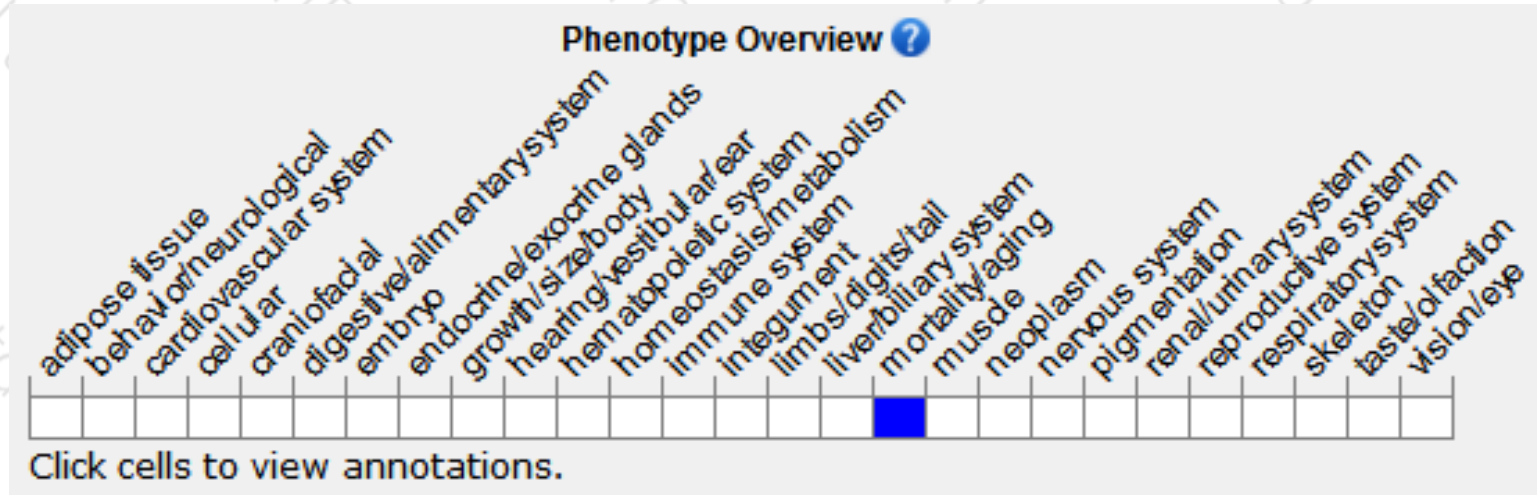
Genomic location distribution



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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