

Aqp6 Cas9-CKO Strategy

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Project Overview

Project Name

Aqp6

Project type

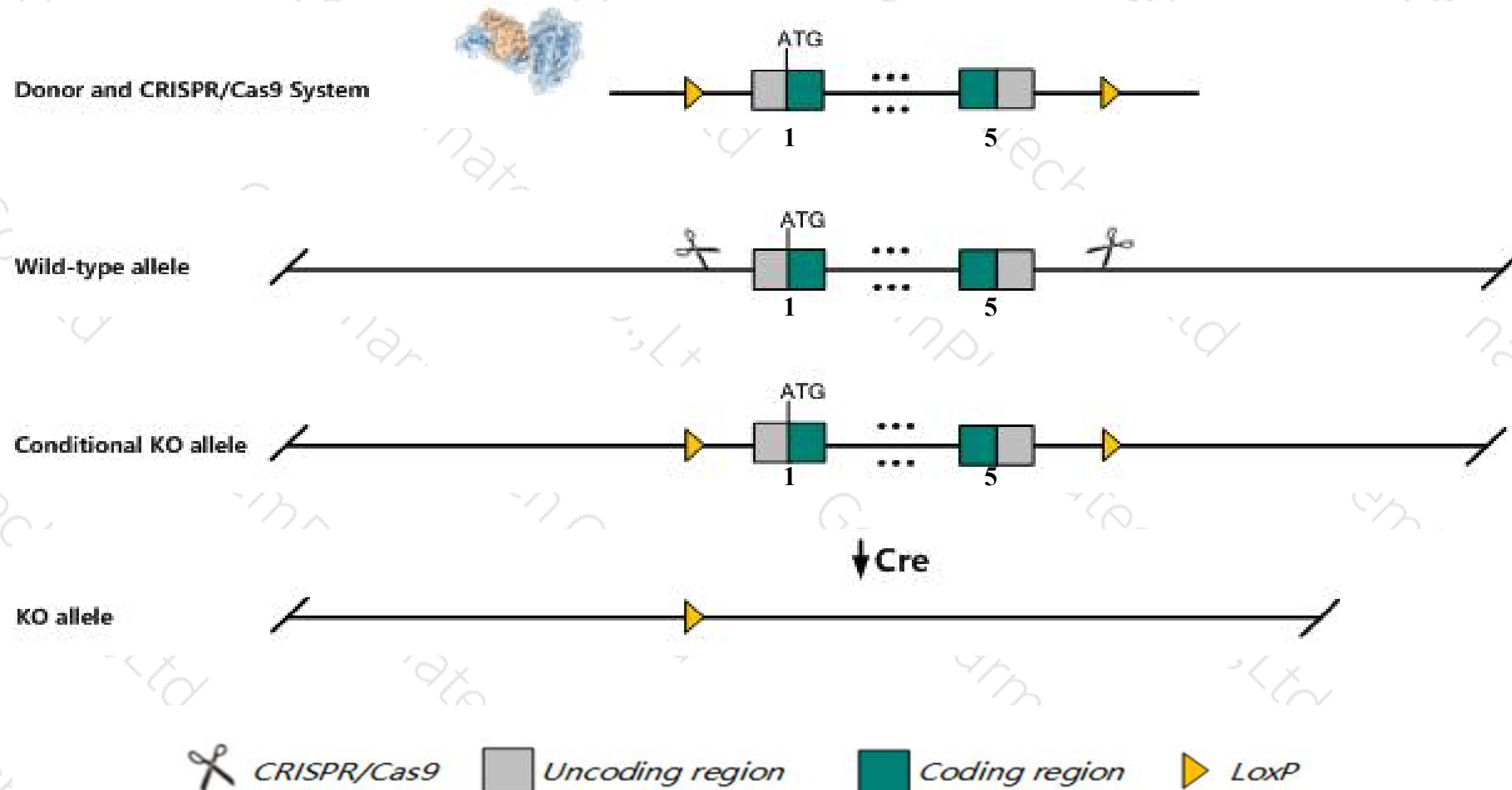
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Aqp6* gene. The schematic diagram is as follows:



Technical routes

- The *Aqp6* gene has 2 transcripts. According to the structure of *Aqp6* gene, exon1-exon5 of *Aqp6-201* (ENSMUST00000023754.5) 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 *Aqp6* 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 *Aqp6* gene is located on the Chr15. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Aqp6 aquaporin 6 [Mus musculus (house mouse)]

Gene ID: 11831, updated on 31-Jan-2019

Summary



Official Symbol	Aqp6 provided by MGI
Official Full Name	aquaporin 6 provided by MGI
Primary source	MGI:MGI:1341204
See related	Ensembl:ENSMUSG00000043144
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	AI790337
Expression	Biased expression in kidney adult (RPKM 20.5), cerebellum adult (RPKM 5.4) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

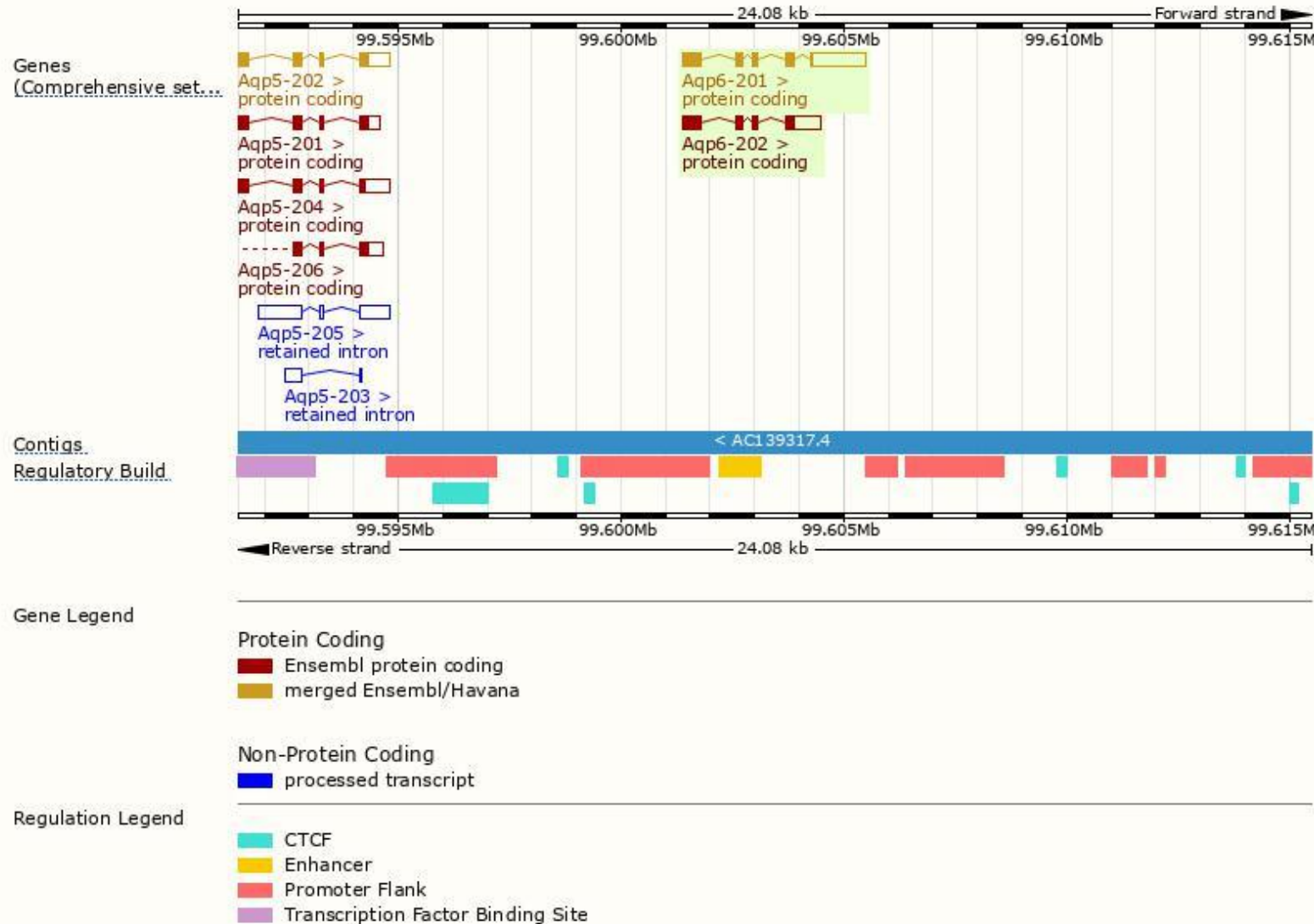
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aqp6-201	ENSMUST00000023754.5	2060	293aa	Protein coding	CCDS27824	Q8C4A0	TSL:1 GENCODE basic APPRIS P2
Aqp6-202	ENSMUST000000230075.1	1427	276aa	Protein coding	-	Q14BV5	GENCODE basic APPRIS ALT2

The strategy is based on the design of *Aqp6-201* transcript,The transcription is shown below



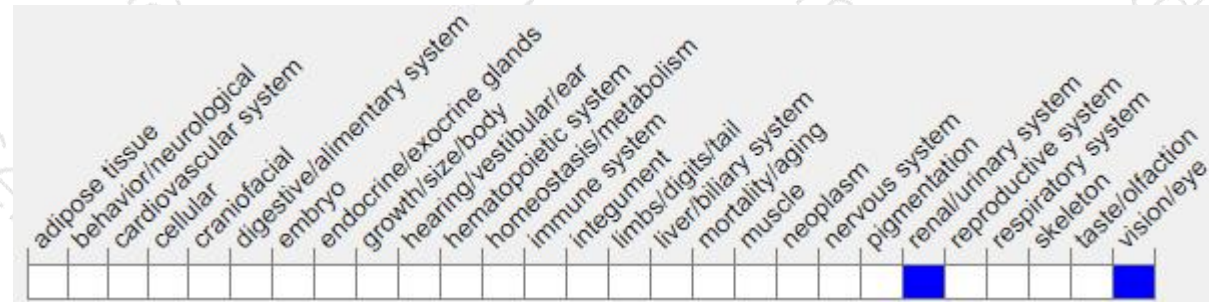
Genomic location distribution



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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