

Aqp5 Cas9-KO Strategy

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Project Overview

Project Name

Aqp5

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Aqp5* gene. The schematic diagram is as follows:



- The *Aqp5* gene has 6 transcripts. According to the structure of *Aqp5* gene, exon1-exon4 of *Aqp5-202* (ENSMUST00000169082.2) 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 *Aqp5* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Homozygous null mutants exhibit reduced growth on solid food and secrete diminished amounts of hypertonic, viscous saliva.
- The *Aqp5* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Aqp5 aquaporin 5 [Mus musculus (house mouse)]

Gene ID: 11830, updated on 5-Mar-2019

Summary



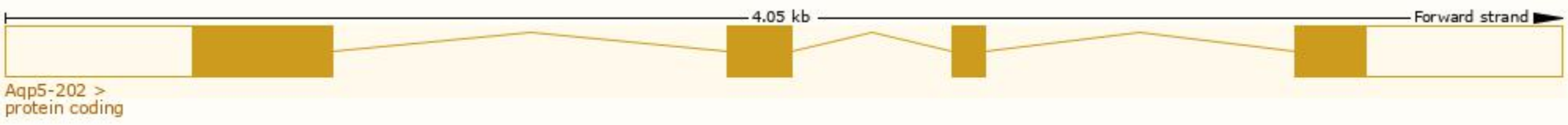
Official Symbol	Aqp5 provided by MGI
Official Full Name	aquaporin 5 provided by MGI
Primary source	MGI:MGI:106215
See related	Ensembl:ENSMUSG00000044217
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Biased expression in lung adult (RPKM 187.0), mammary gland adult (RPKM 72.8) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

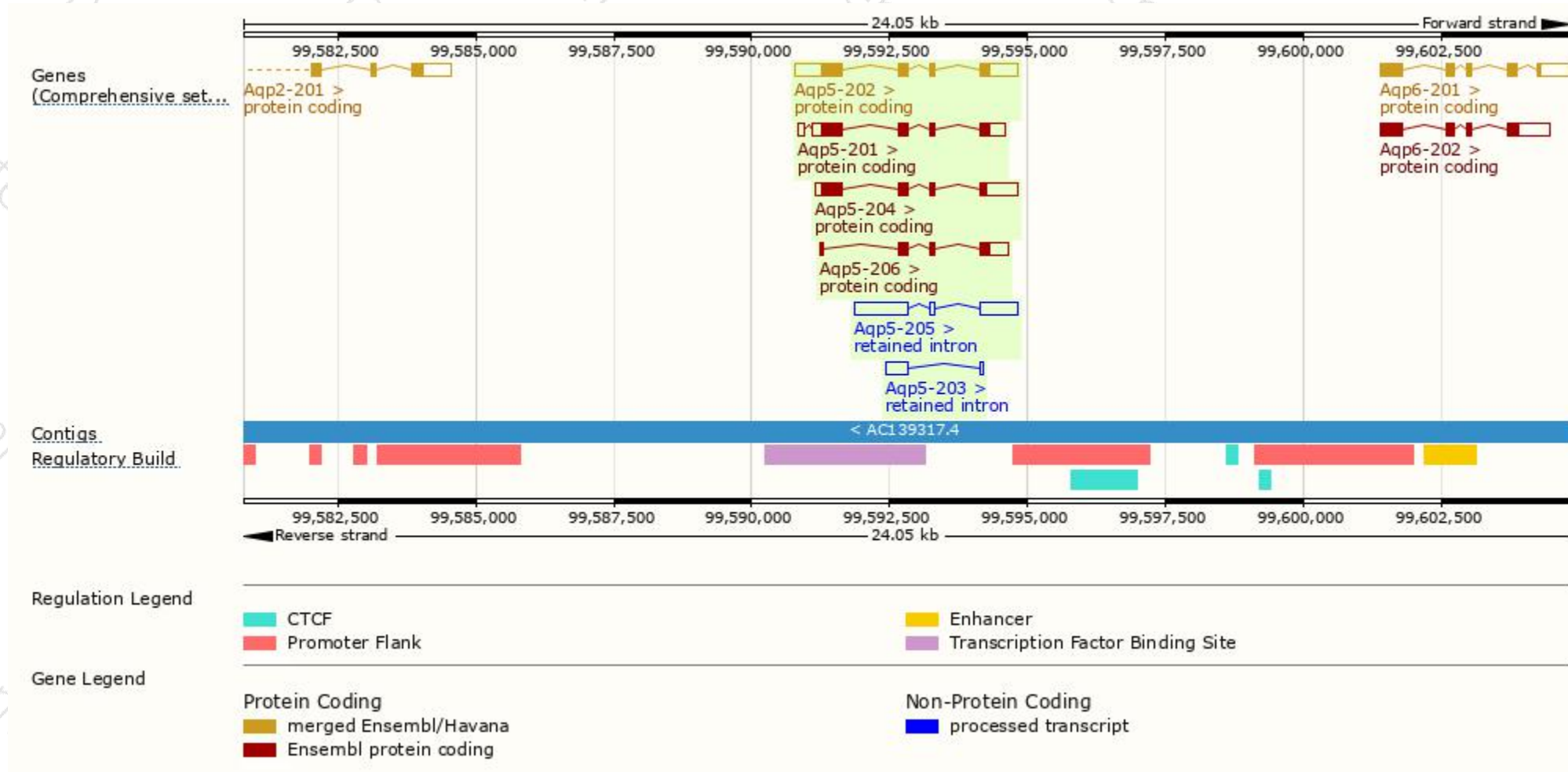
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aqp5-202	ENSMUST00000169082.2	1797	265aa	Protein coding	CCDS27823	Q9WTY4	TSL:1 GENCODE basic APPRIS P1
Aqp5-201	ENSMUST00000088200.12	1376	265aa	Protein coding	CCDS27823	Q9WTY4	TSL:1 GENCODE basic APPRIS P1
Aqp5-204	ENSMUST00000229728.1	1415	241aa	Protein coding	-	A0A2R8VI16	GENCODE basic
Aqp5-206	ENSMUST00000231163.1	831	148aa	Protein coding	-	A0A2R8VHL2	GENCODE basic
Aqp5-205	ENSMUST00000230998.1	1739	No protein	Retained intron	-	-	-
Aqp5-203	ENSMUST00000229264.1	443	No protein	Retained intron	-	-	-

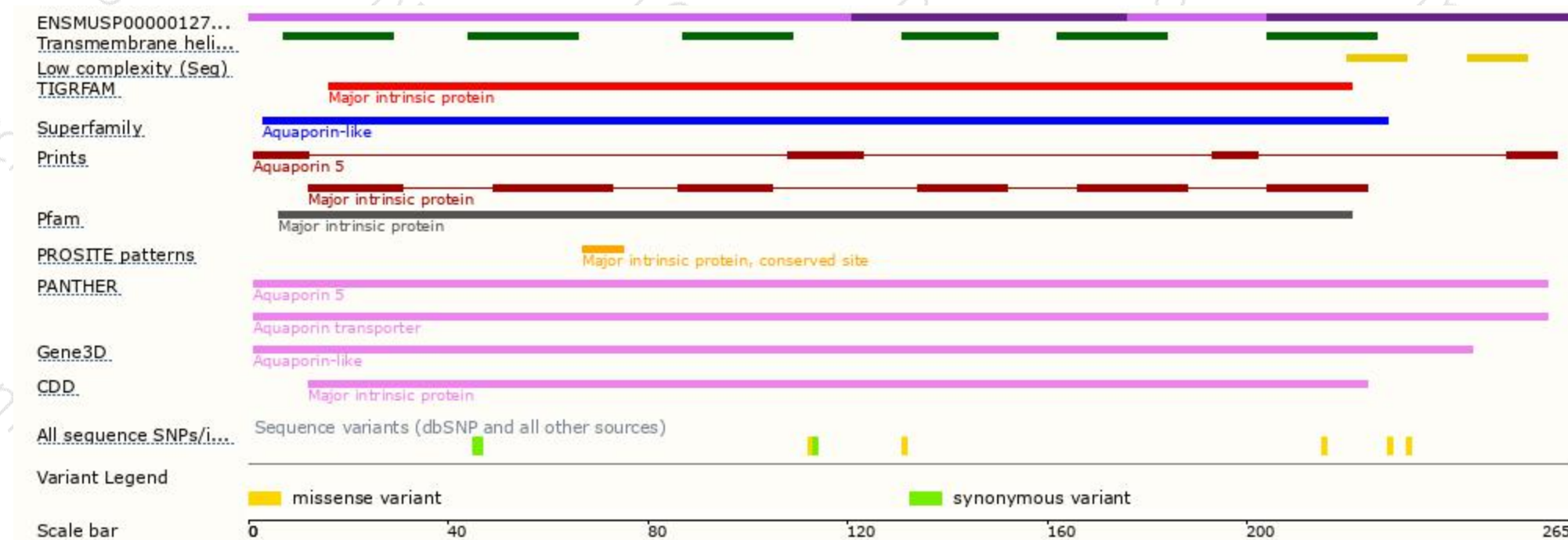
The strategy is based on the design of *Aqp5-202* transcript,The transcription is shown below



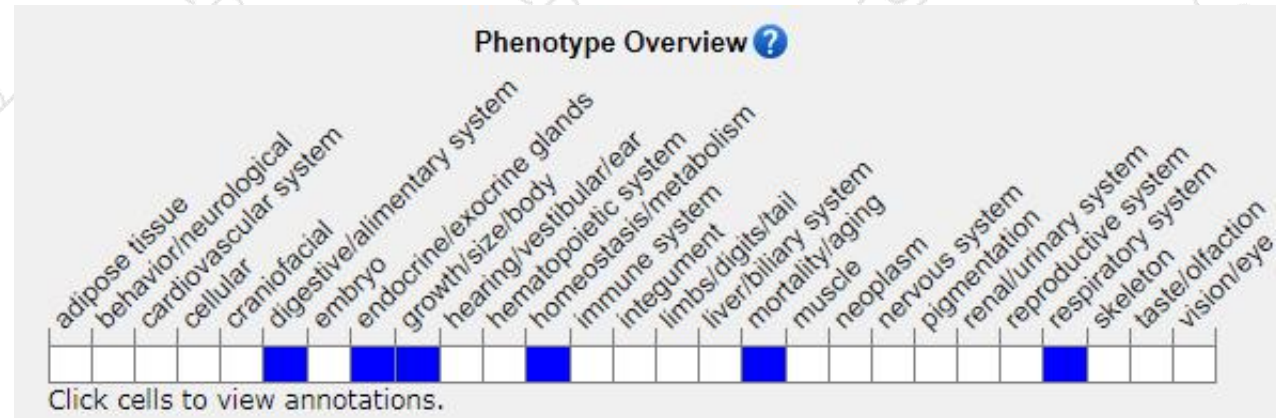
Genomic location distribution



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/>).

According to the existing MGI data, Homozygous null mutants exhibit reduced growth on solid food and secrete diminished amounts of hypertonic, viscous saliva.

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

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