

Aqp8 Cas9-KO Strategy

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Design Date:

2020-1-31

Project Overview

Project Name

Aqp8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Aqp8* gene. The schematic diagram is as follows:



- The *Aqp8* gene has 3 transcripts. According to the structure of *Aqp8* gene, exon3-exon6 of *Aqp8-201* (ENSMUST00000033023.9) transcript is recommended as the knockout region. The region contains 526bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Aqp8* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for a disruption in this gene results in enlarged testes and a reduction in water permeability in plasma membrane of testes.
- The *Aqp8* gene is located on the Chr7. 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)

Aqp8 aquaporin 8 [Mus musculus (house mouse)]

Gene ID: 11833, updated on 19-Mar-2019

Summary



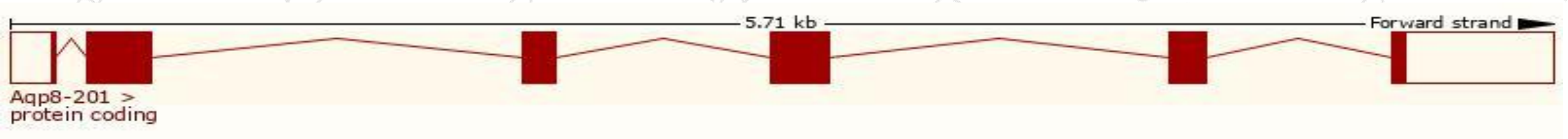
Official Symbol	Aqp8 provided by MGI
Official Full Name	aquaporin 8 provided by MGI
Primary source	MGI:MGI:1195271
See related	Ensembl:ENSMUSG000000030762
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI255744, AQP-8
Expression	Biased expression in colon adult (RPKM 230.0), liver E18 (RPKM 138.5) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

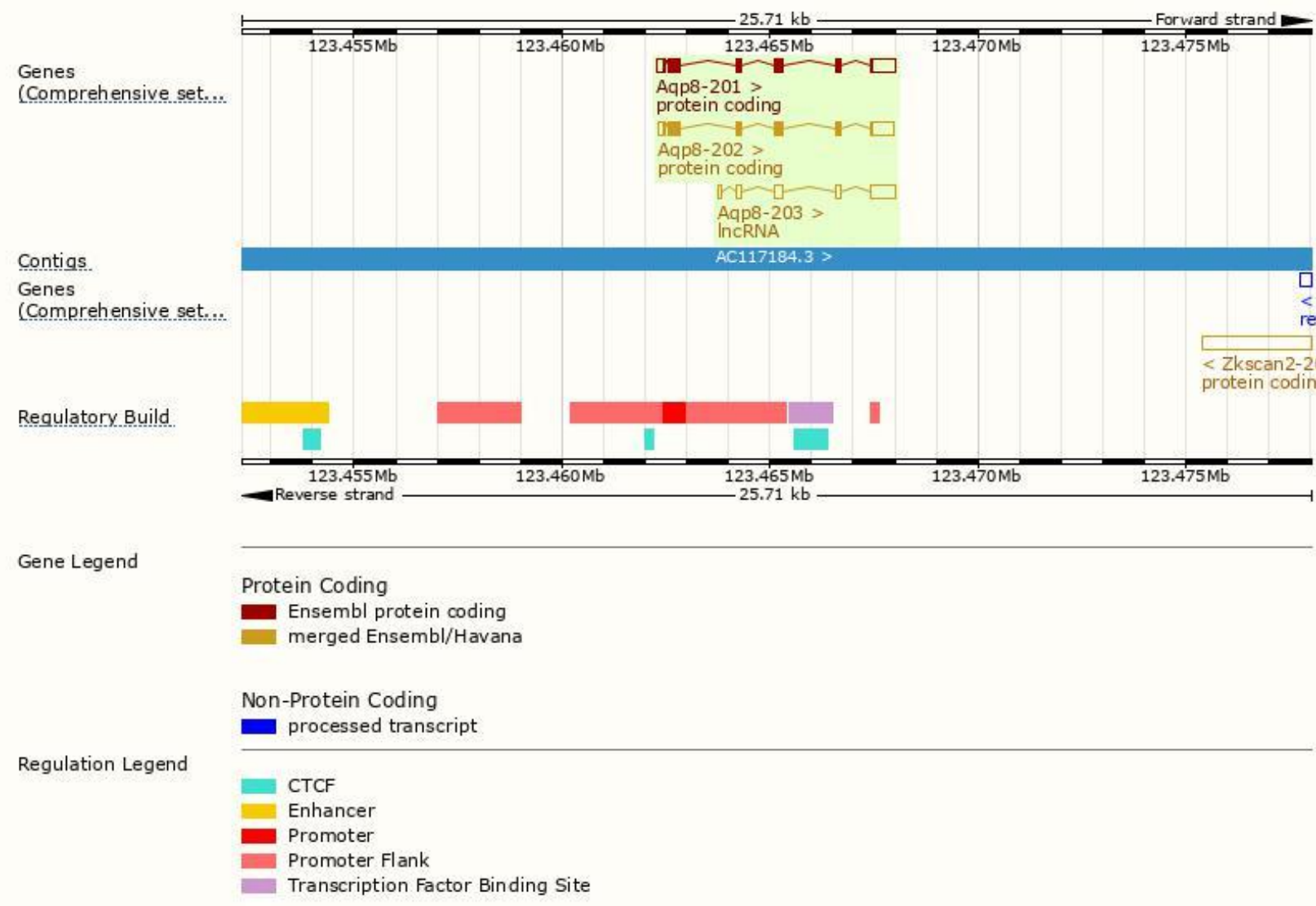
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aqp8-201	ENSMUST00000033023.9	1487	260aa	Protein coding	CCDS85406	A0A0X1KG59	TSL:1 GENCODE basic APPRIS ALT2
Aqp8-202	ENSMUST00000098056.5	1451	261aa	Protein coding	CCDS72038	P56404	TSL:1 GENCODE basic APPRIS P3
Aqp8-203	ENSMUST00000206106.1	1159	No protein	lncRNA	-	-	TSL:1

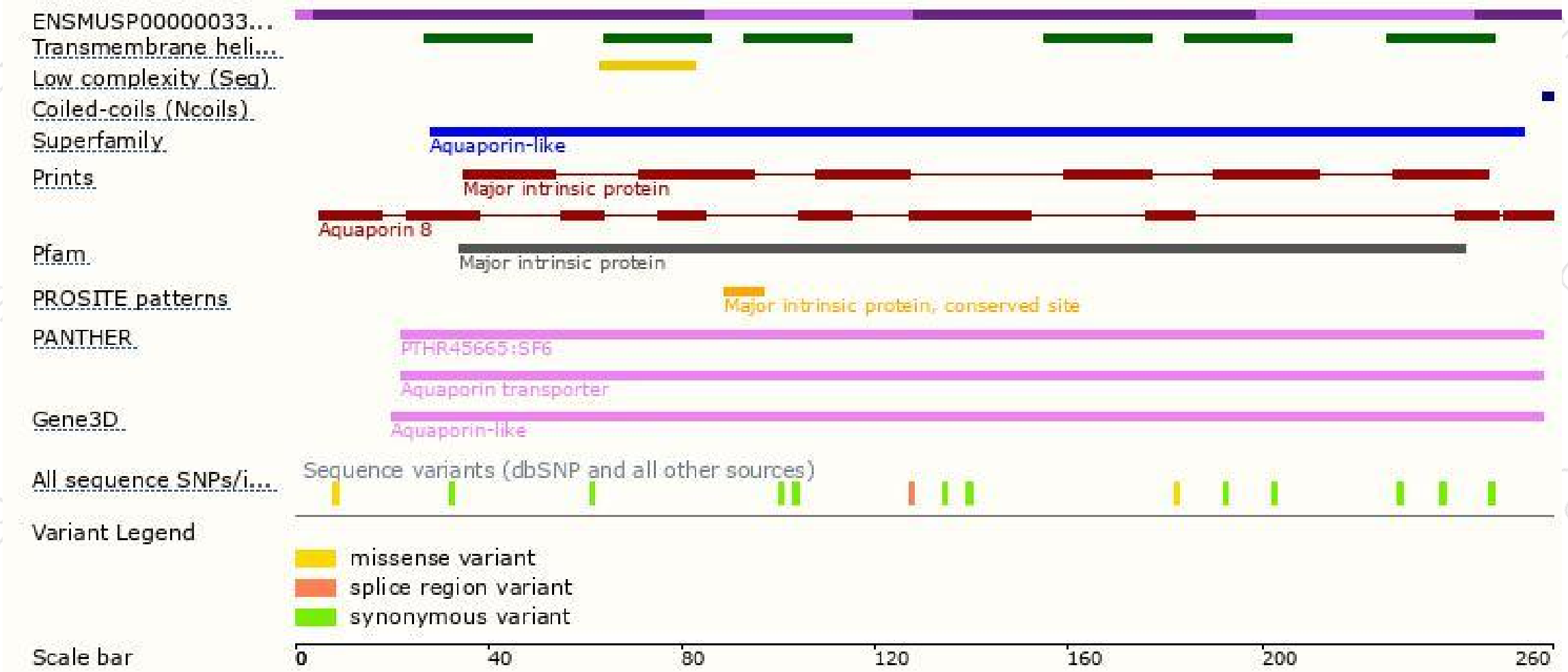
The strategy is based on the design of *Aqp8-201* transcript,The transcription is shown below



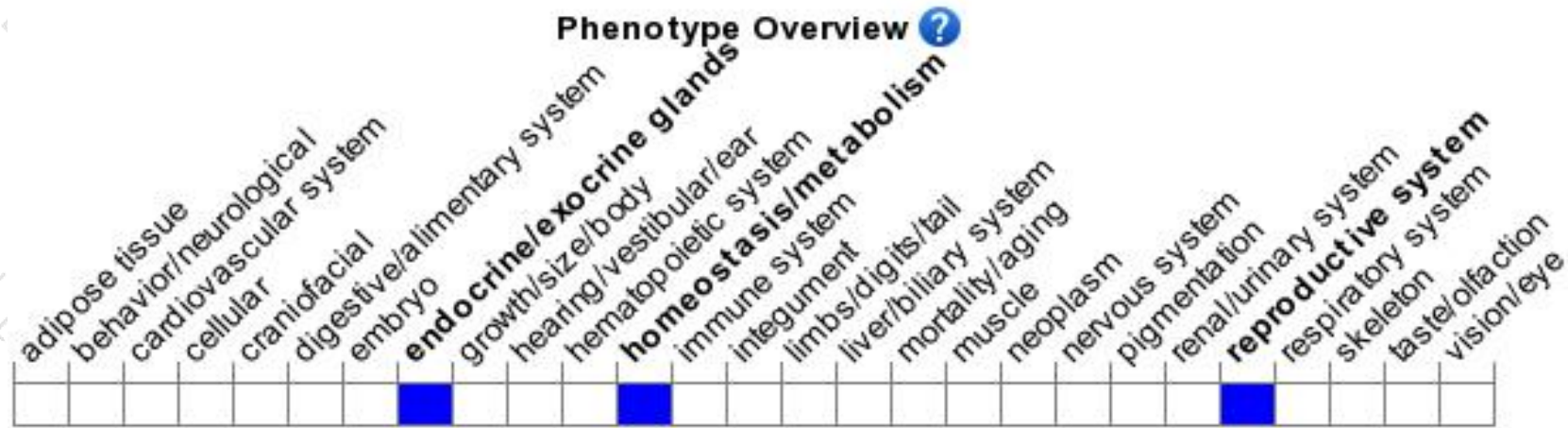
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a disruption in this gene results in enlarged testes and a reduction in water permeability in plasma membrane of testes.

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

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