

Slc4a8 Cas9-KO Strategy

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Design Date:

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Project Overview

Project Name

Slc4a8

Project type

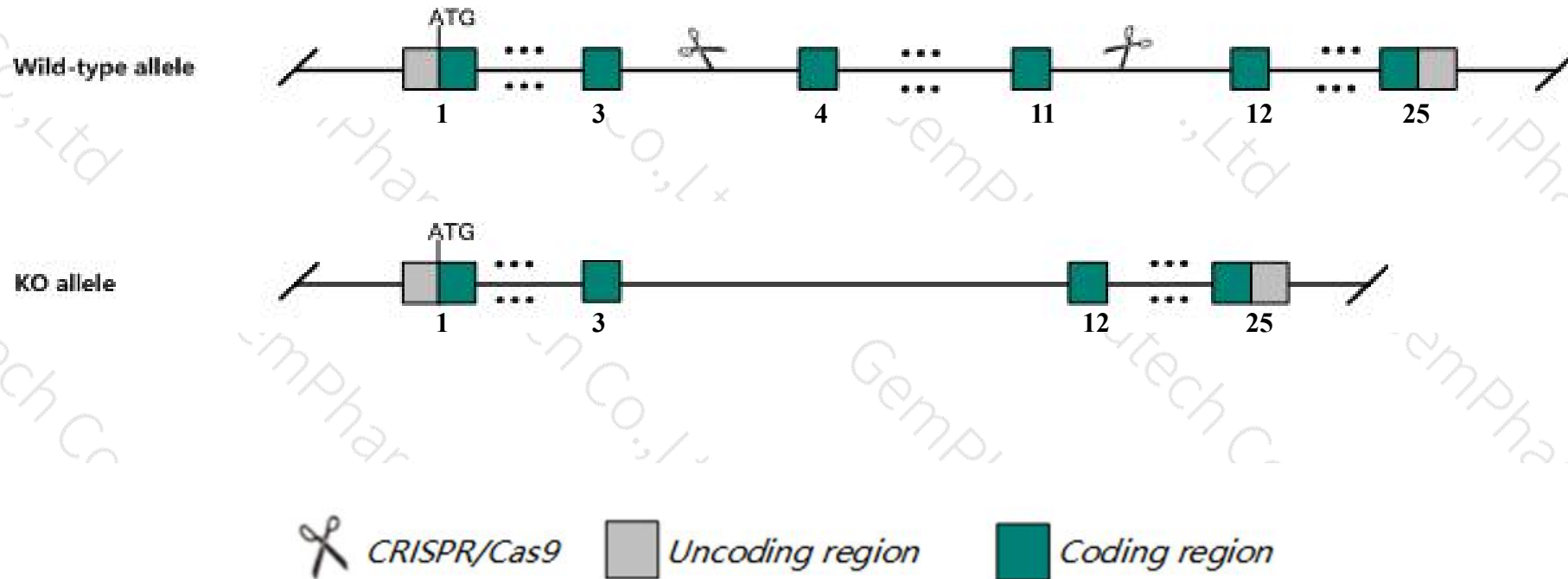
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc4a8* gene. The schematic diagram is as follows:



- The *Slc4a8* gene has 7 transcripts. According to the structure of *Slc4a8* gene, exon4-exon11 of *Slc4a8-201* (ENSMUST00000023776.12) transcript is recommended as the knockout region. The region contains 1066bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc4a8* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, mice homozygous for a knock-out allele exhibit abnormal sodium and chloride ion excretion.
- The *Slc4a8* 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)

Slc4a8 solute carrier family 4 (anion exchanger), member 8 [*Mus musculus* (house mouse)]

Gene ID: 59033, updated on 17-Dec-2019

Summary

Official Symbol Slc4a8 provided by [MGI](#)
Official Full Name solute carrier family 4 (anion exchanger), member 8 provided by [MGI](#)
Primary source [MGI:MGI:1928745](#)
See related [Ensembl:ENSMUSG00000023032](#)
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 NDCBE; kNBC-3; AW493845; C230026C11
Expression Broad expression in frontal lobe adult (RPKM 7.6), cortex adult (RPKM 7.4) and 19 other tissues [See more](#)
Orthologs [human](#) [all](#)

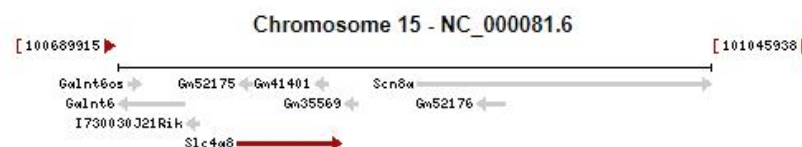
Genomic context

Location: 15; 15 F1

See Slc4a8 in [Genome Data Viewer](#)








Exon count: 27

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	15	NC_000081.6 (100761747..100823971)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	15	NC_000081.5 (100592178..100654402)

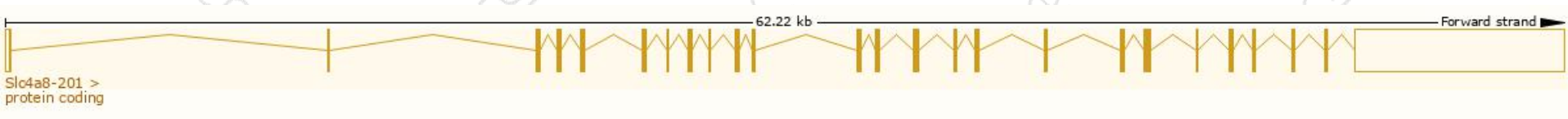


Transcript information (Ensembl)

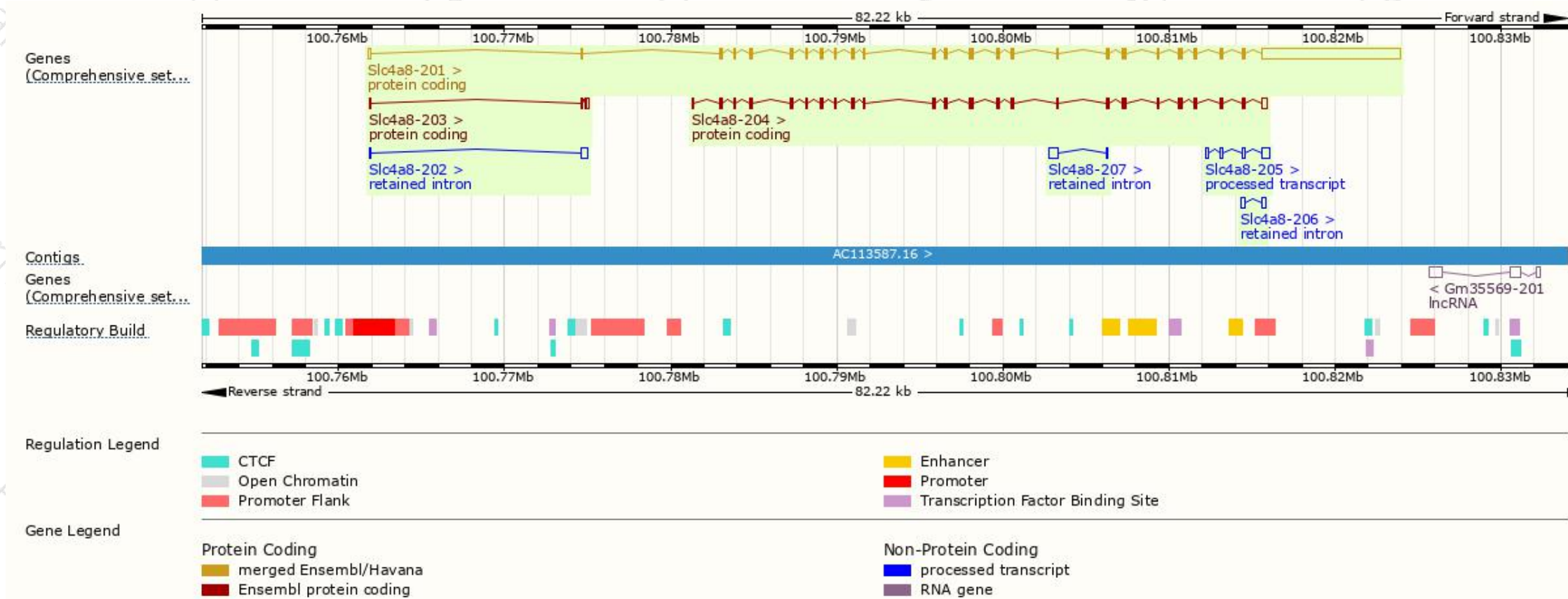
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc4a8-201	ENSMUST00000023776.12	11790	1089aa	 Protein coding	CCDS37214	Q8JZR6	TSL:1 GENCODE basic APPRIS P3
Slc4a8-204	ENSMUST00000162049.1	3532	1037aa	 Protein coding	CCDS84193	Q8JZR6	TSL:1 GENCODE basic APPRIS ALT2
Slc4a8-203	ENSMUST00000161564.1	445	68aa	 Protein coding	-	E0CYV1	TSL:3 GENCODE basic
Slc4a8-205	ENSMUST00000162483.1	790	No protein	 Processed transcript	-	-	TSL:2
Slc4a8-207	ENSMUST00000162805.1	641	No protein	 Retained intron	-	-	TSL:3
Slc4a8-202	ENSMUST00000160256.1	421	No protein	 Retained intron	-	-	TSL:3
Slc4a8-206	ENSMUST00000162744.1	374	No protein	 Retained intron	-	-	TSL:2

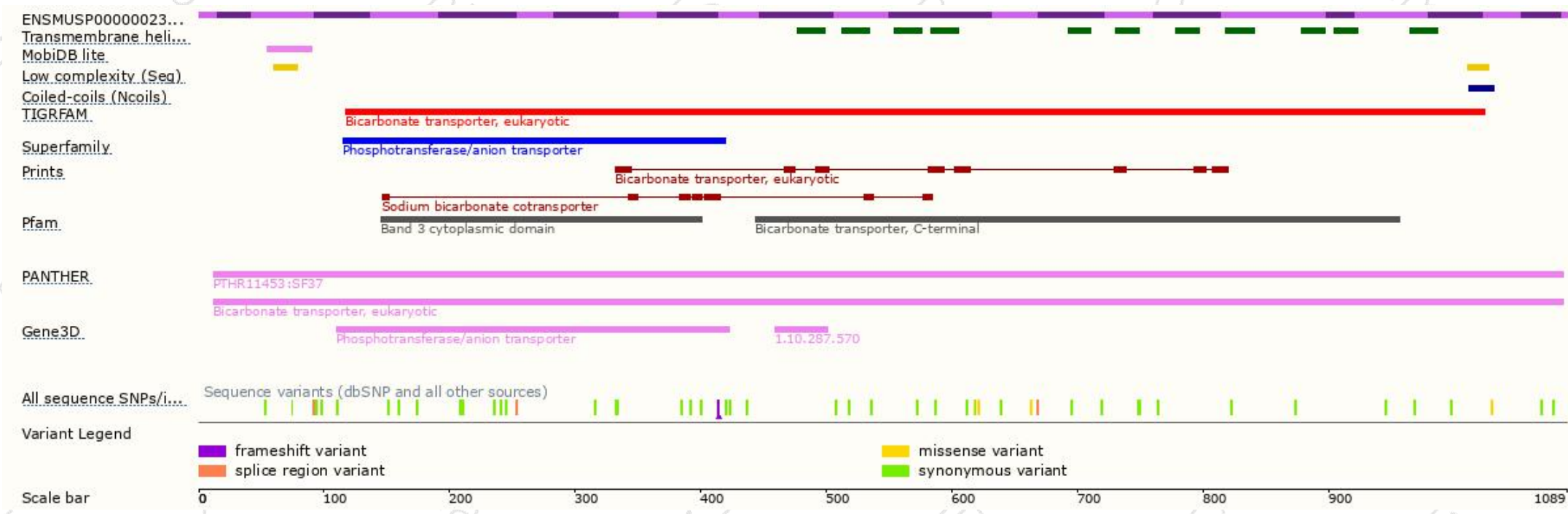
The strategy is based on the design of *Slc4a8-201* transcript,the transcription is shown below:



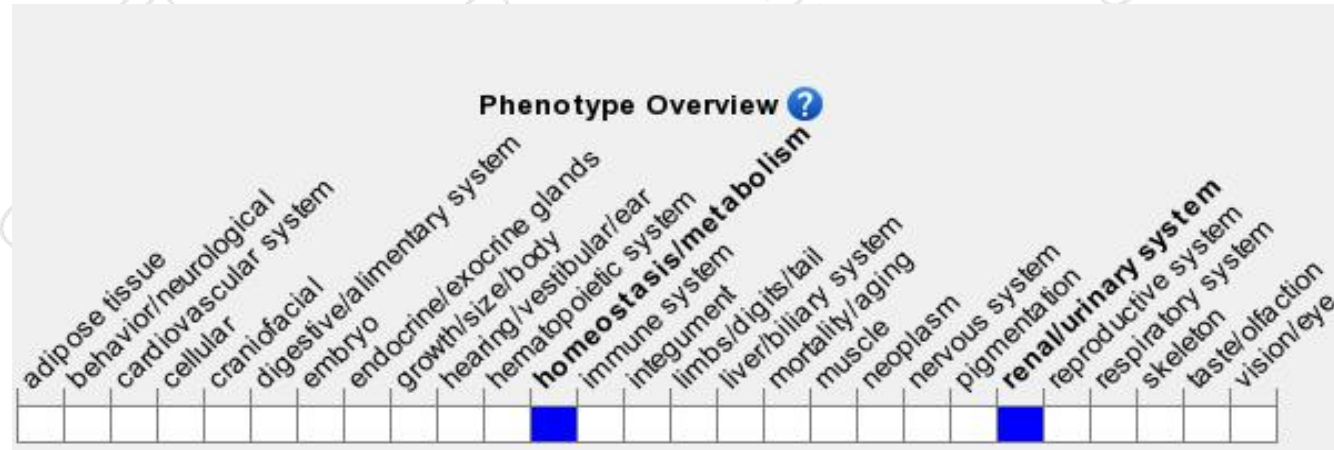
Genomic location distribution



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 knock-out allele exhibit abnormal sodium and chloride ion excretion.

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

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