Slc17a1 Cas9-KO Strategy

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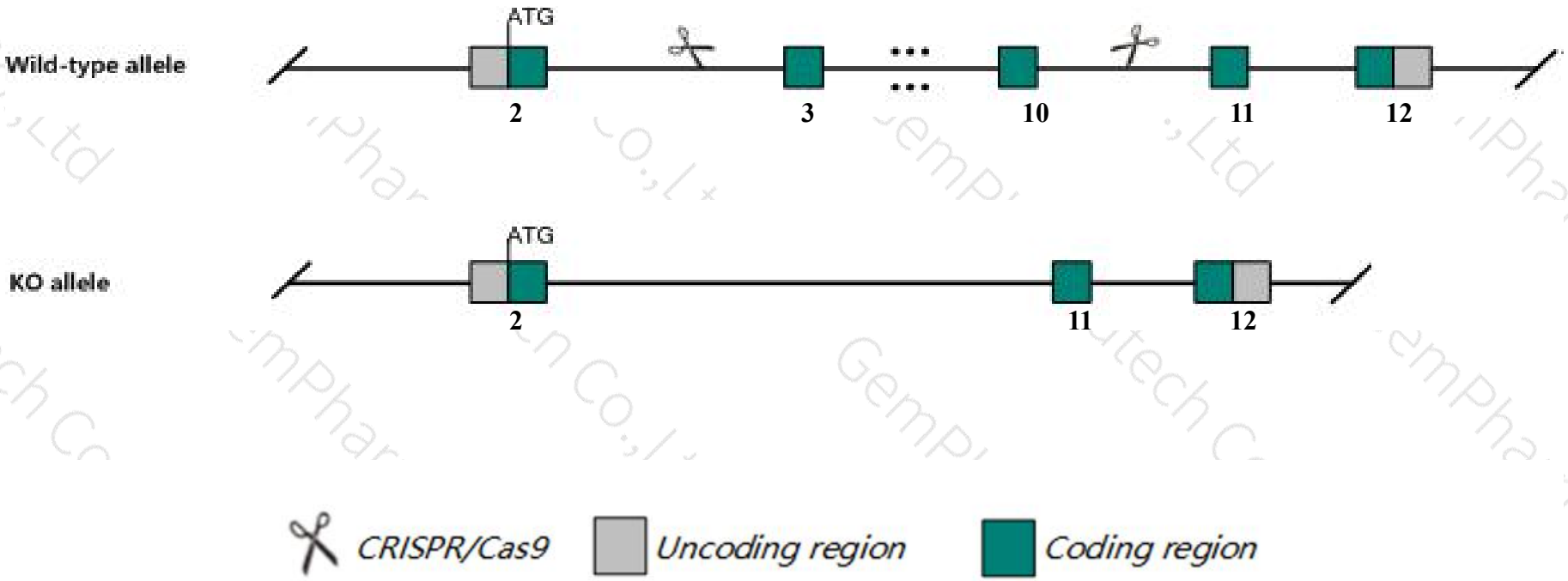
Project Overview

Project Name	***Slc17a1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc17a1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc17a1* gene has 4 transcripts. According to the structure of *Slc17a1* gene, exon3-exon10 of *Slc17a1-201* (ENSMUST00000006785.7) transcript is recommended as the knockout region.The region contains 1144bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc17a1* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ The *Slc17a1* gene is located on the Chr13. 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）

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Slc17a1 solute carrier family 17 (sodium phosphate), member 1 [*Mus musculus* (house mouse)]

Gene ID: 20504, updated on 28-Jan-2020

Summary

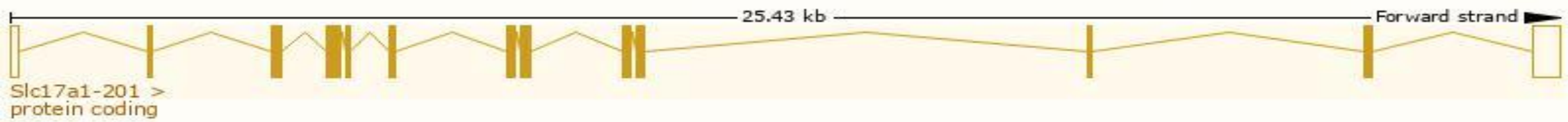
Official Symbol	Slc17a1 provided by MGI
Official Full Name	solute carrier family 17 (sodium phosphate), member 1 provided by MGI
Primary source	MGI:MGI:103209
See related	Ensembl:ENSMUSG00000021335
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Npt1; Napi1; NAPI-1
Expression	Restricted expression toward kidney adult (RPKM 67.9) See more
Orthologs	human all

Transcript information（Ensembl）

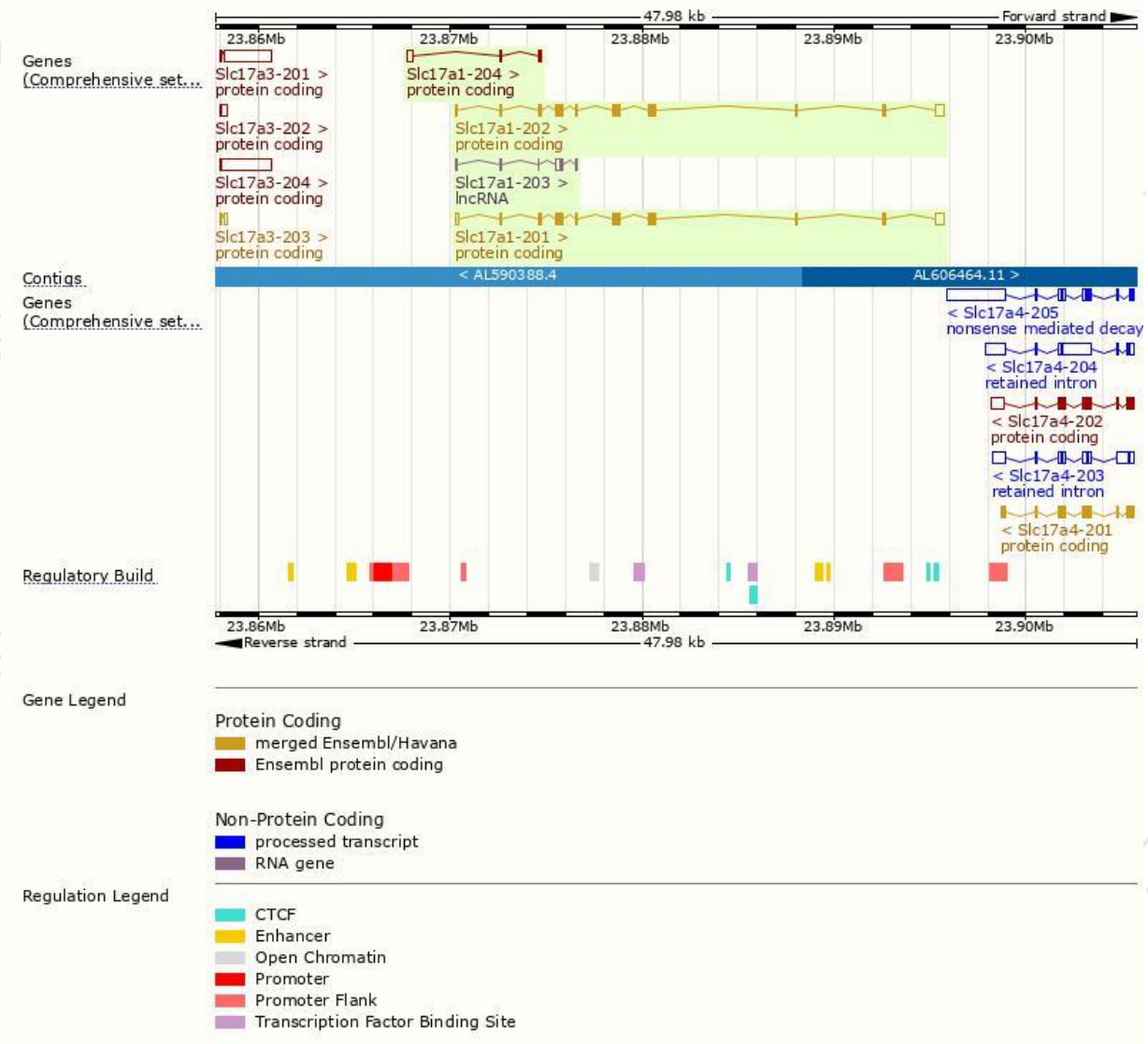
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc17a1-201	ENSMUST00000006785.7	2026	465aa	Protein coding	CCDS26372	Q61983	TSL:1 GENCODE basic APPRIS P1
Slc17a1-202	ENSMUST00000110413.7	1965	465aa	Protein coding	CCDS26372	Q61983	TSL:1 GENCODE basic APPRIS P1
Slc17a1-204	ENSMUST00000130211.7	551	65aa	Protein coding	-	Q5SZ94	CDS 3' incomplete TSL:3
Slc17a1-203	ENSMUST00000129042.1	503	No protein	lncRNA	-	-	TSL:3

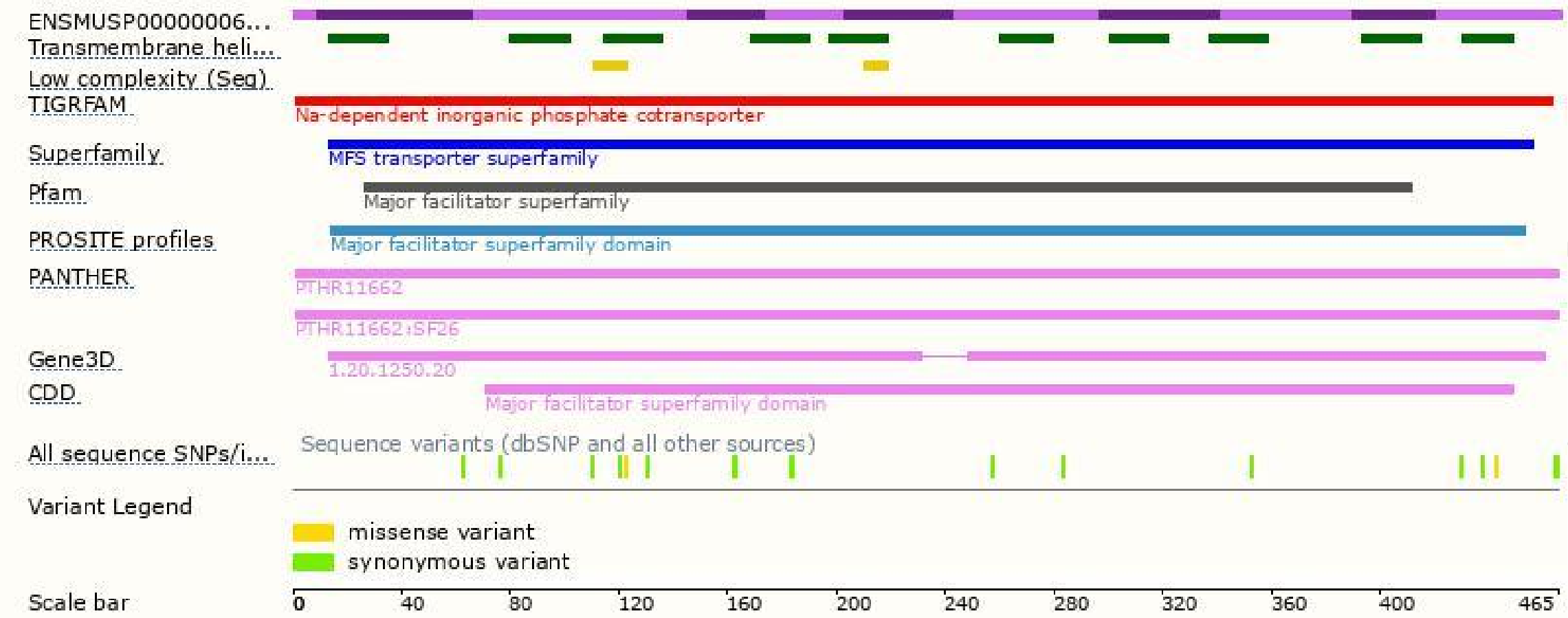
The strategy is based on the design of *Slc17a1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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