

Slc17a3 Cas9-CKO Strategy

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Project Overview

Project Name

Slc17a3

Project type

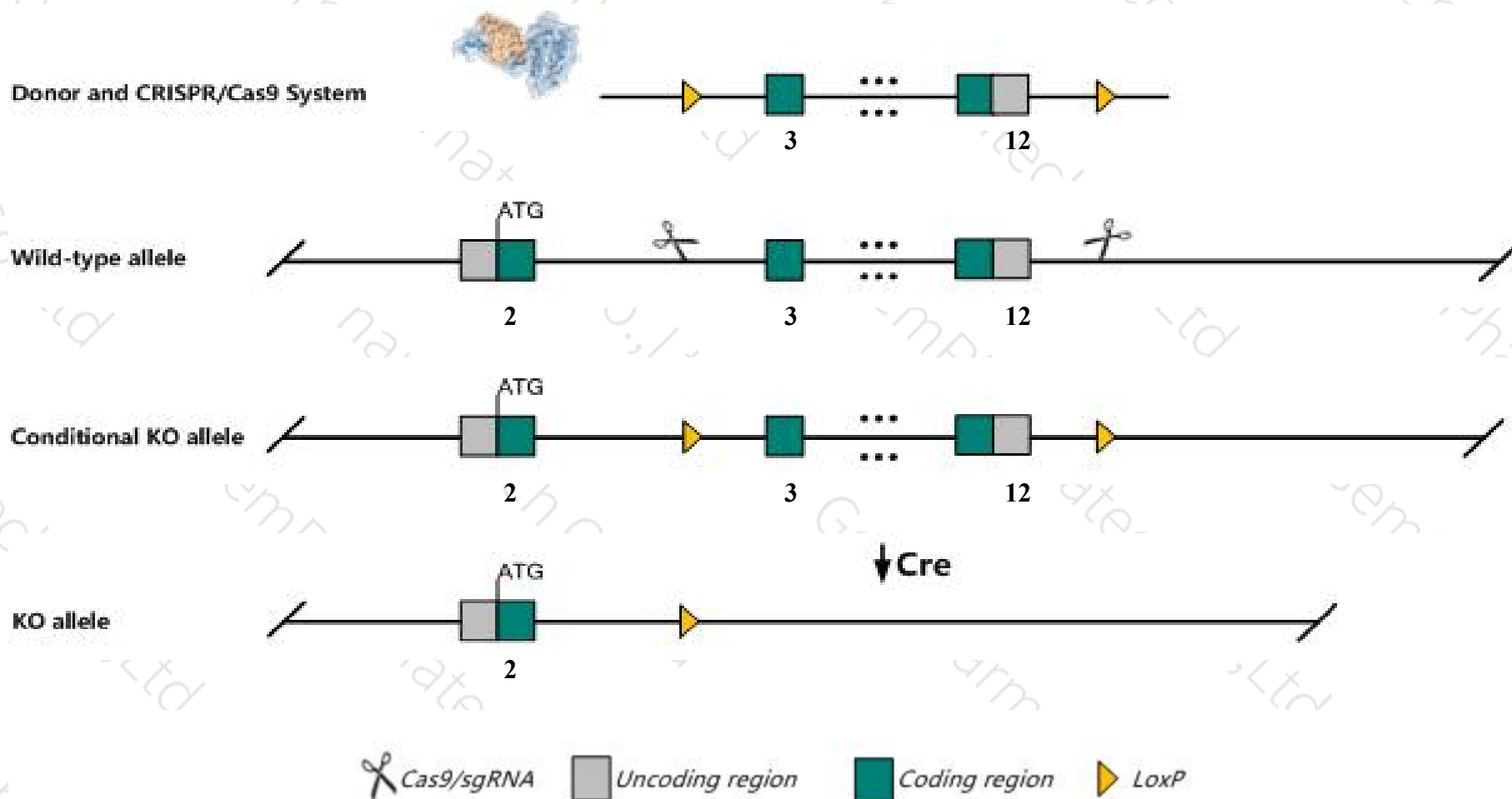
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc17a3* gene. The schematic diagram is as follows:



- The *Slc17a3* gene has 5 transcripts. According to the structure of *Slc17a3* gene, exon3-exon12 of *Slc17a3*-204(ENSMUST00000166467.8) transcript is recommended as the knockout region. The region contains 1406bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc17a3* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Slc17a3* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Slc17a3 solute carrier family 17 (sodium phosphate), member 3 [Mus musculus (house mouse)]

Gene ID: 105355, updated on 13-Mar-2020

Summary



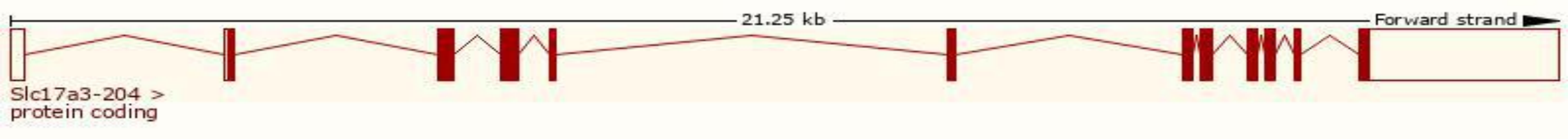
Official Symbol	Slc17a3 provided by MGI
Official Full Name	solute carrier family 17 (sodium phosphate), member 3 provided by MGI
Primary source	MGI:MGI:2389216
See related	Ensembl:ENSMUSG00000036083
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW261723, Npt4
Expression	Biased expression in kidney adult (RPKM 17.4), liver adult (RPKM 4.9) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

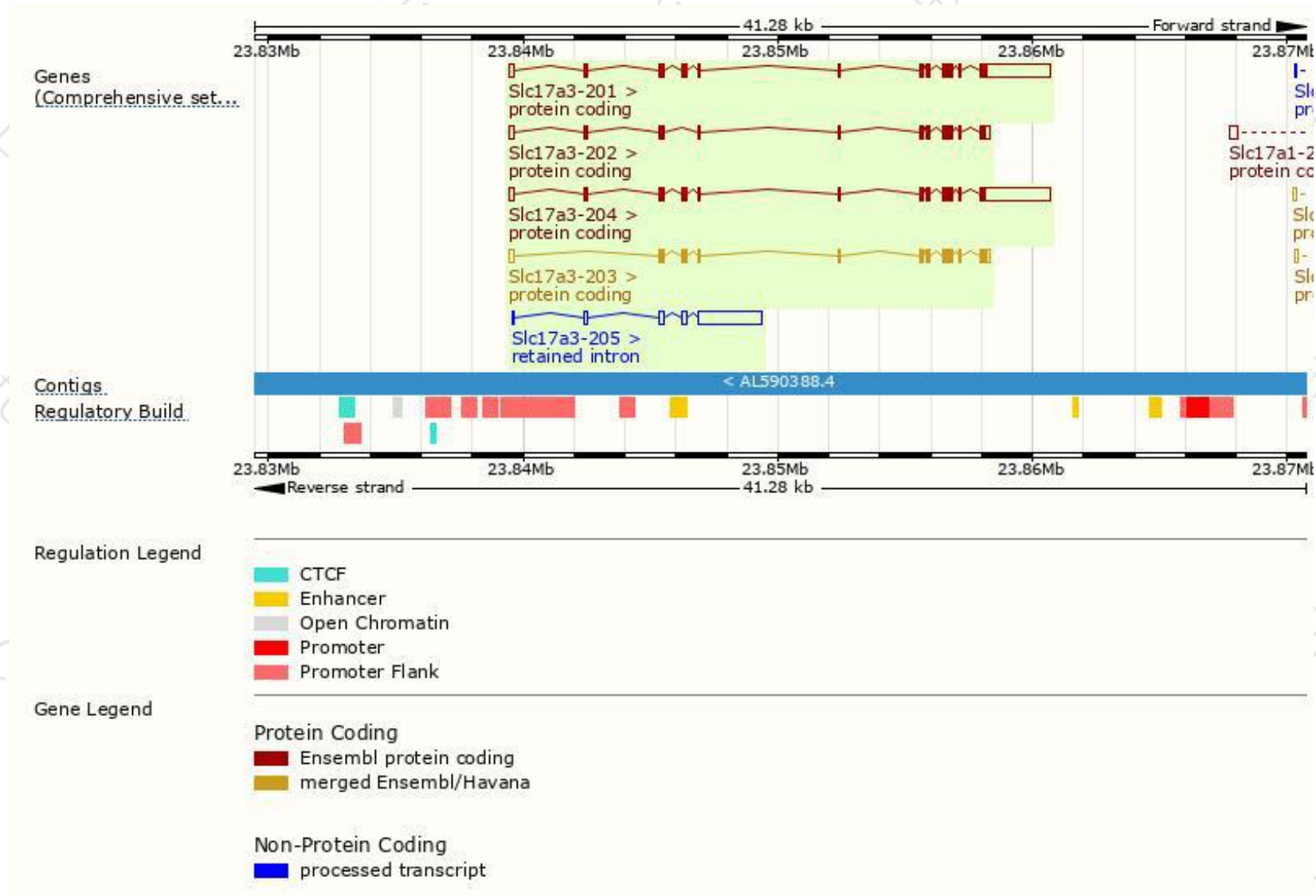
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc17a3-204	ENSMUST00000166467.8	4336	498aa	Protein coding	CCDS26371	G3UWD9	TSL:5 GENCODE basic APPRIS P3
Slc17a3-201	ENSMUST00000039721.13	4276	498aa	Protein coding	CCDS26371	G3UWD9	TSL:1 GENCODE basic APPRIS P3
Slc17a3-203	ENSMUST00000110422.2	1764	462aa	Protein coding	CCDS49220	Q5SZ92	TSL:5 GENCODE basic APPRIS ALT2
Slc17a3-202	ENSMUST00000091698.11	1759	420aa	Protein coding	-	Q5SZ93	TSL:5 GENCODE basic
Slc17a3-205	ENSMUST00000225076.1	3146	No protein	Retained intron	-	-	

The strategy is based on the design of *Slc17a3-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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