

Slc24a3 Cas9-CKO Strategy

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Project Overview

Project Name

Slc24a3

Project type

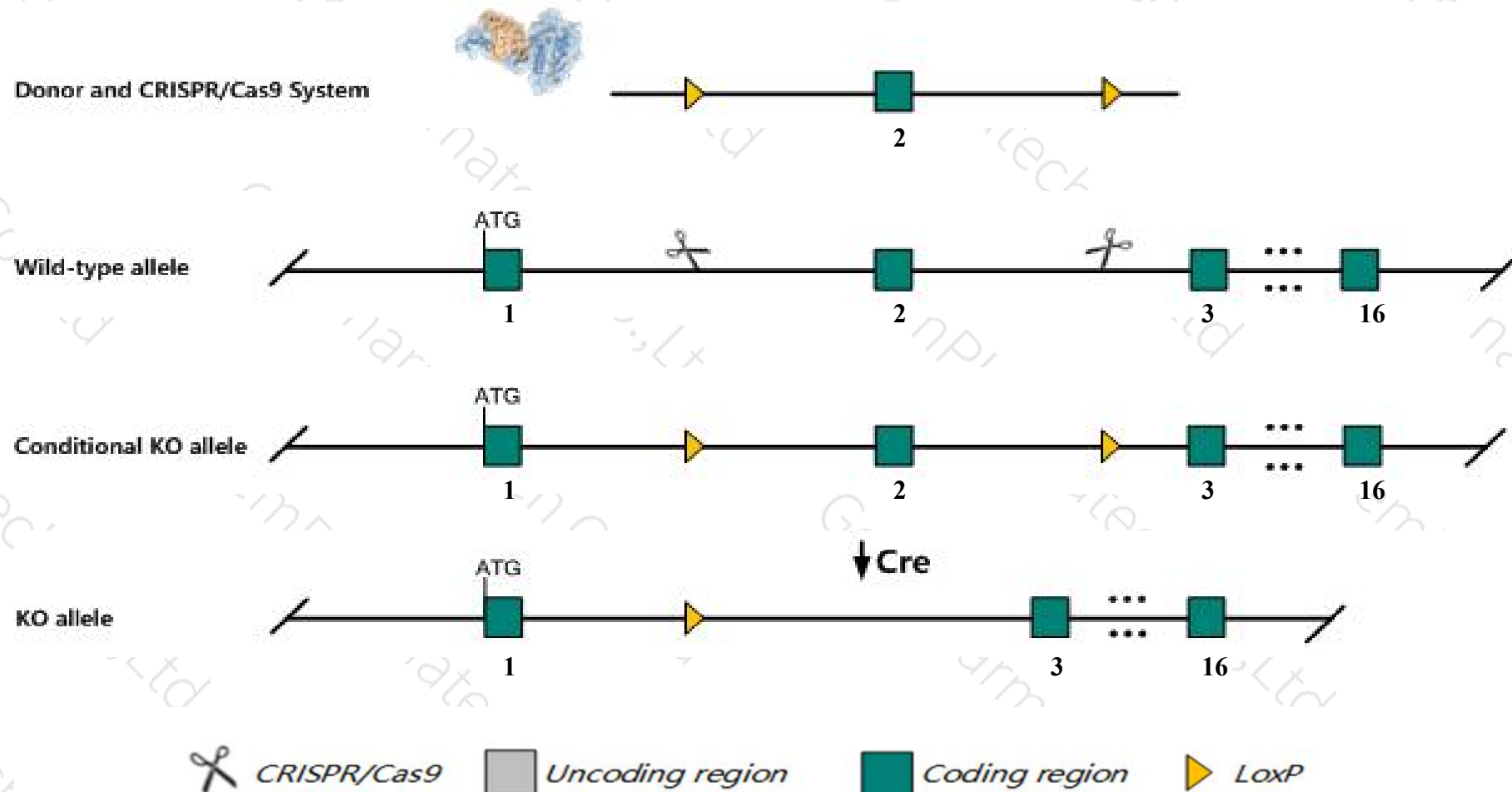
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc24a3* gene. The schematic diagram is as follows:



Technical routes

- The *Slc24a3* gene has 5 transcripts. According to the structure of *Slc24a3* gene, exon2 of *Slc24a3-201* (ENSMUST00000081121.3) transcript is recommended as the knockout region. The region contains 77bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc24a3* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- Transcript *Slc24a3*-203 may not be affected.
- The *Slc24a3* gene is located on the Chr2. 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)

Slc24a3 solute carrier family 24 (sodium/potassium/calcium exchanger), member 3 [*Mus musculus* (house mouse)]

Gene ID: 94249, updated on 4-Jan-2020

Summary

Official Symbol	Slc24a3 provided by MGI
Official Full Name	solute carrier family 24 (sodium/potassium/calcium exchanger), member 3 provided by MGI
Primary source	MGI:MGI:2137513
See related	Ensembl:ENSMUSG00000063873
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NCKX3
Expression	Broad expression in bladder adult (RPKM 24.5), subcutaneous fat pad adult (RPKM 18.0) and 18 other tissues See more
Orthologs	human all

Genomic context

Location: 2; 2 G1

See Slc24a3 in [Genome Data Viewer](#)

Exon count: 18

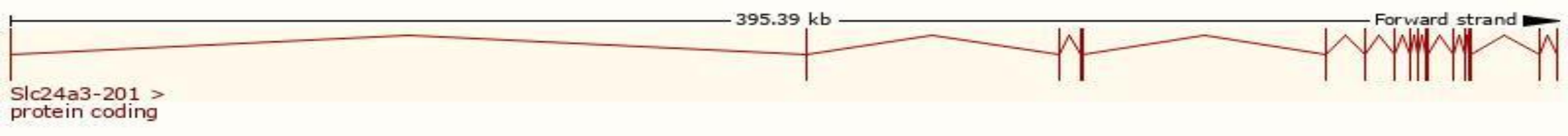
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	2	NC_000068.7 (145167775..145642166)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	2	NC_000068.6 (145068347..145467689)

Transcript information (Ensembl)

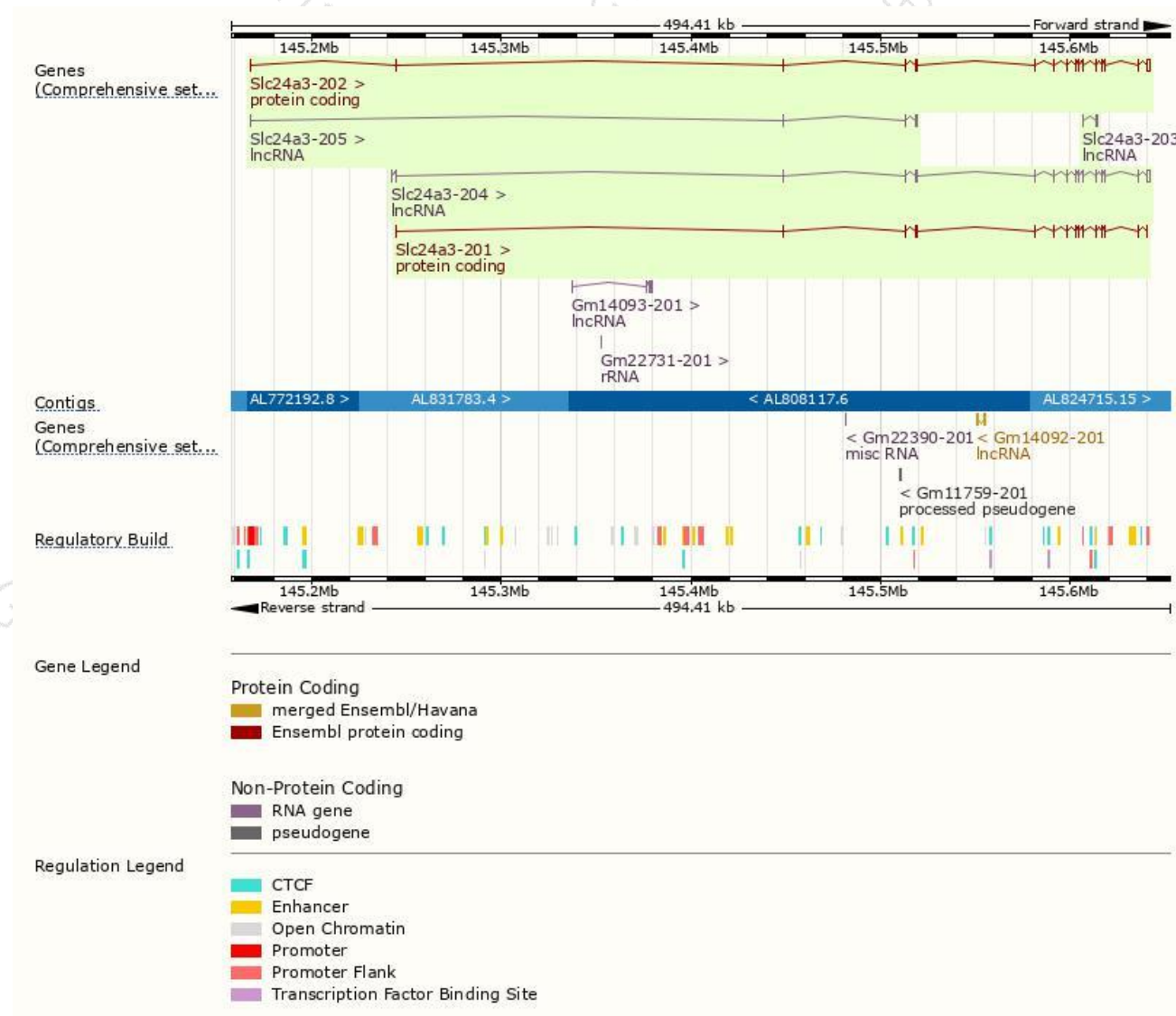
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc24a3-201	ENSMUST00000081121.3	1788	595aa	Protein coding	CCDS38256	Q8VD29	TSL:5 GENCODE basic APPRIS P2
Slc24a3-202	ENSMUST00000110007.7	4048	645aa	Protein coding	-	Q99PD7	TSL:1 GENCODE basic APPRIS ALT2
Slc24a3-204	ENSMUST00000137908.1	3649	No protein	lncRNA	-	-	TSL:1
Slc24a3-203	ENSMUST00000131123.1	688	No protein	lncRNA	-	-	TSL:3
Slc24a3-205	ENSMUST00000153249.7	620	No protein	lncRNA	-	-	TSL:3

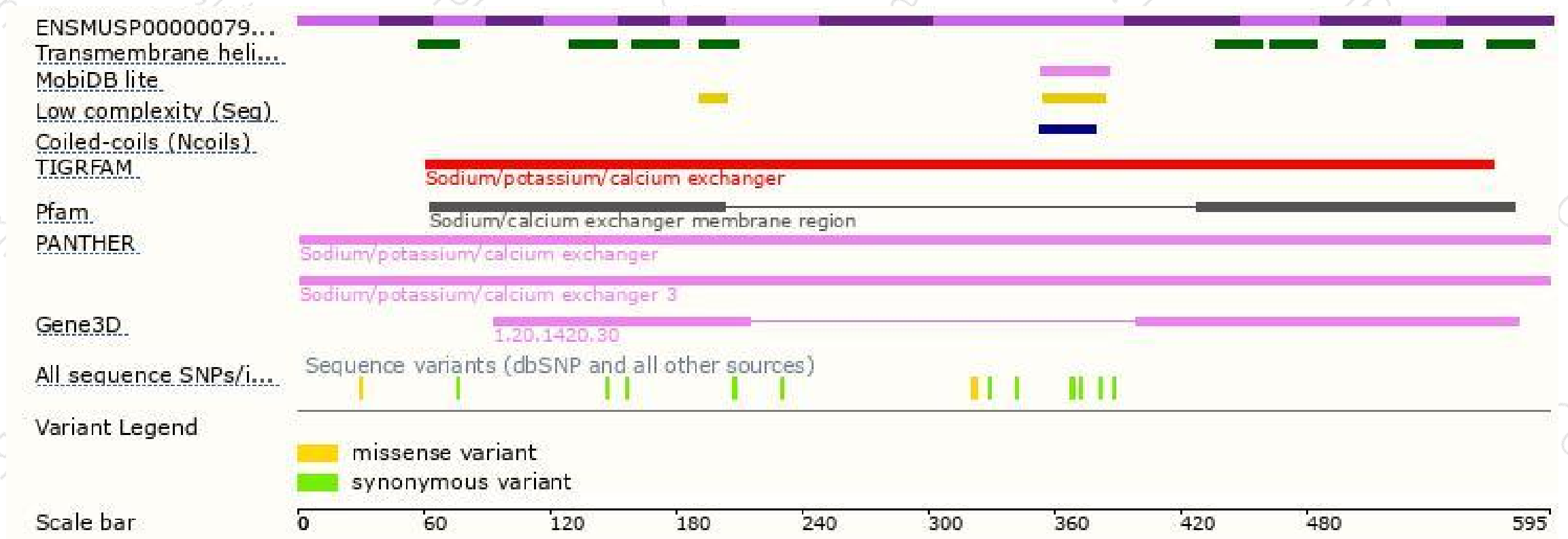
The strategy is based on the design of *Slc24a3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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