Slc9b1 Cas9-CKO Strategy

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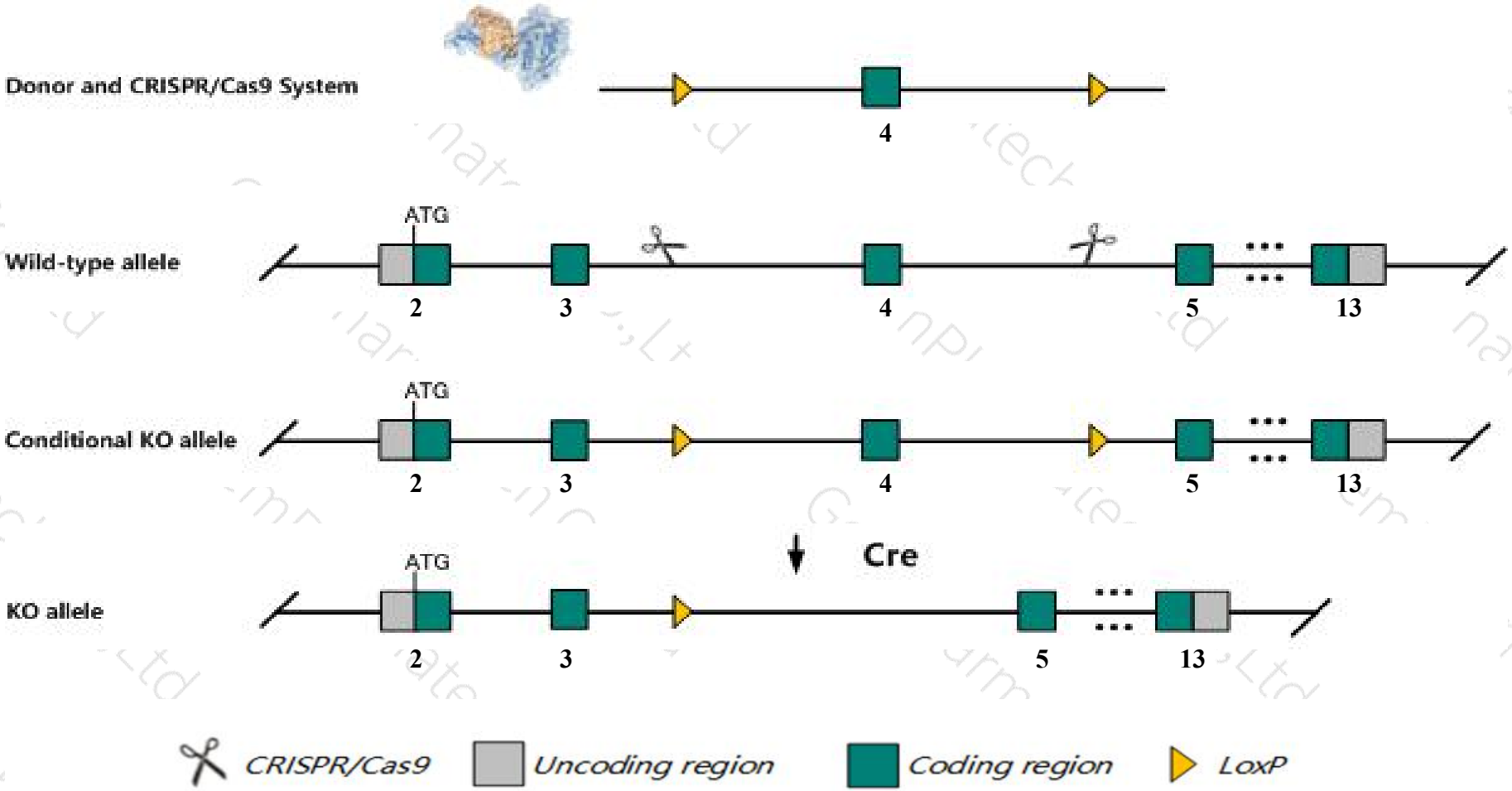
Project Overview

Project Name	***Slc9b1***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc9b1* gene. The schematic diagram is as follows:



Technical routes

- The *Slc9b1* gene has 9 transcripts. According to the structure of *Slc9b1* gene, exon4 of *Slc9b1-201* (ENSMUST00000078568.11) transcript is recommended as the knockout region.The region contains 298bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Slc9b1* 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

➢ The *Slc9b1* gene is located on the Chr3. 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）

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Slc9b1 solute carrier family 9, subfamily B (NHA1, cation proton antiporter 1), member 1 [Mus musculus (house mouse)]

Gene ID: 74446, updated on 19-Feb-2019

Summary

Official Symbol	Slc9b1 provided by MGI
Official Full Name	solute carrier family 9, subfamily B (NHA1, cation proton antiporter 1), member 1 provided by MGI
Primary source	MGI:MGI:1921696
See related	Ensembl:ENSMUSG00000050150
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	1700094G20Rik, 4933424B12Rik, 4933425K02Rik, Nhedc1, mtsNHE
Expression	Restricted expression toward testis adult (RPKM 25.1) See more
Orthologs	human all

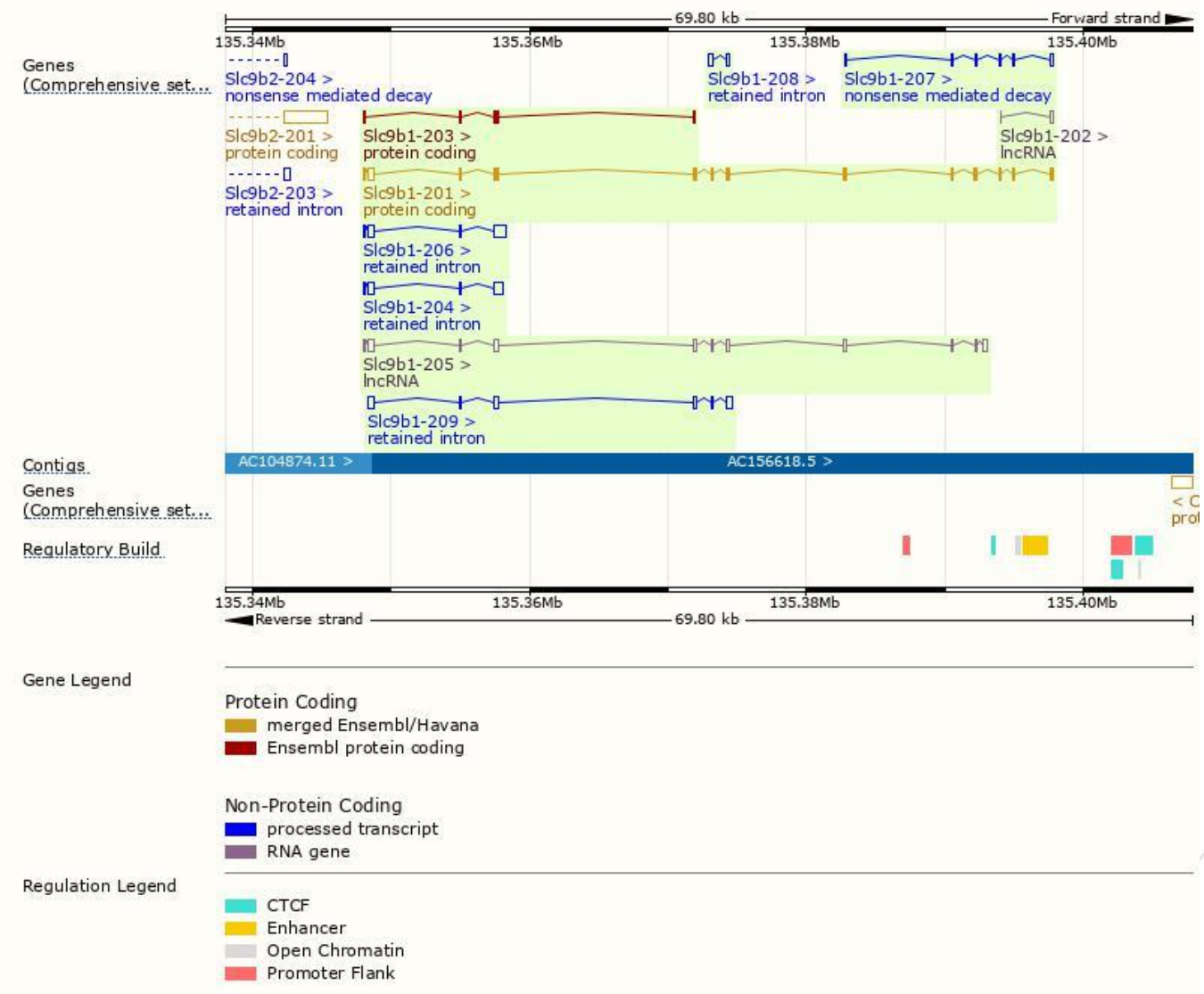
Transcript information（Ensembl）

The gene has 9 transcripts,all transcripts are shown below:

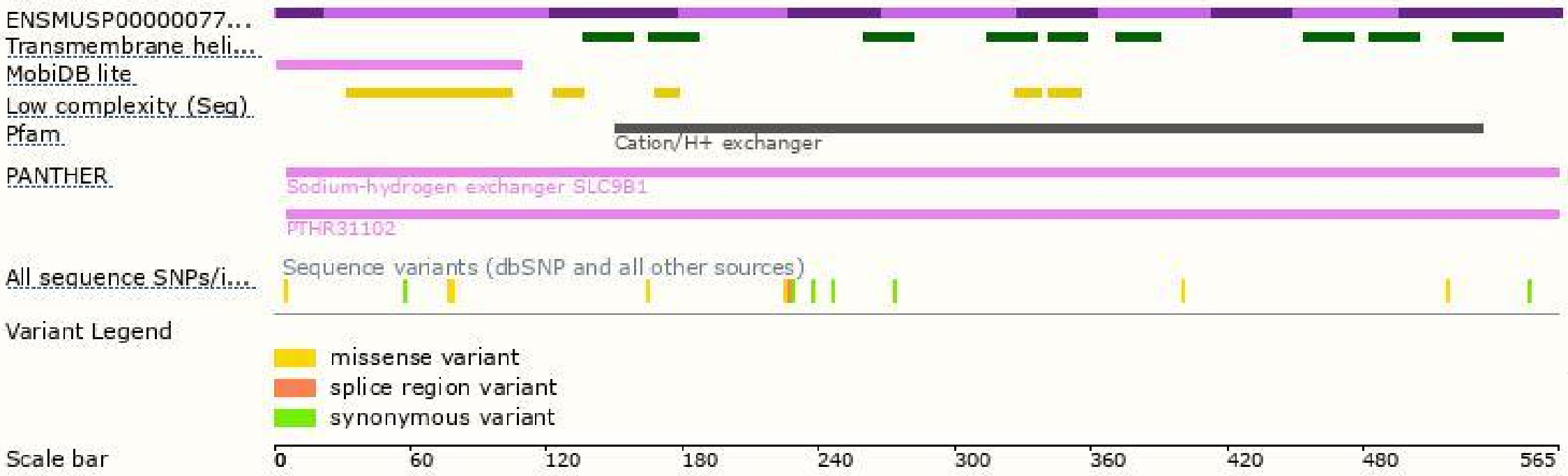
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc9b1-201	ENSMUST00000078568.11	2248	565aa	Protein coding	CCDS17855	G5E8I2	TSL:1 GENCODE basic APPRIS P1
Slc9b1-203	ENSMUST00000159658.7	588	144aa	Protein coding	-	E0CY67	CDS 3' incomplete TSL:2
Slc9b1-207	ENSMUST00000161417.5	783	88aa	Nonsense mediated decay	-	F7CTY9	CDS 5' incomplete TSL:5
Slc9b1-209	ENSMUST00000162767.1	1545	No protein	Retained intron	-	-	TSL:1
Slc9b1-206	ENSMUST00000160941.7	1407	No protein	Retained intron	-	-	TSL:1
Slc9b1-204	ENSMUST00000160047.7	1196	No protein	Retained intron	-	-	TSL:1
Slc9b1-208	ENSMUST00000161506.1	492	No protein	Retained intron	-	-	TSL:3
Slc9b1-205	ENSMUST00000160460.7	2072	No protein	lncRNA	-	-	TSL:1
Slc9b1-202	ENSMUST00000159276.2	294	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Slc9b1-201* 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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