

Slc8b1 Cas9-CKO Strategy

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Reviewer:

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Design Date:

2020-1-23

Project Overview

Project Name

Slc8b1

Project type

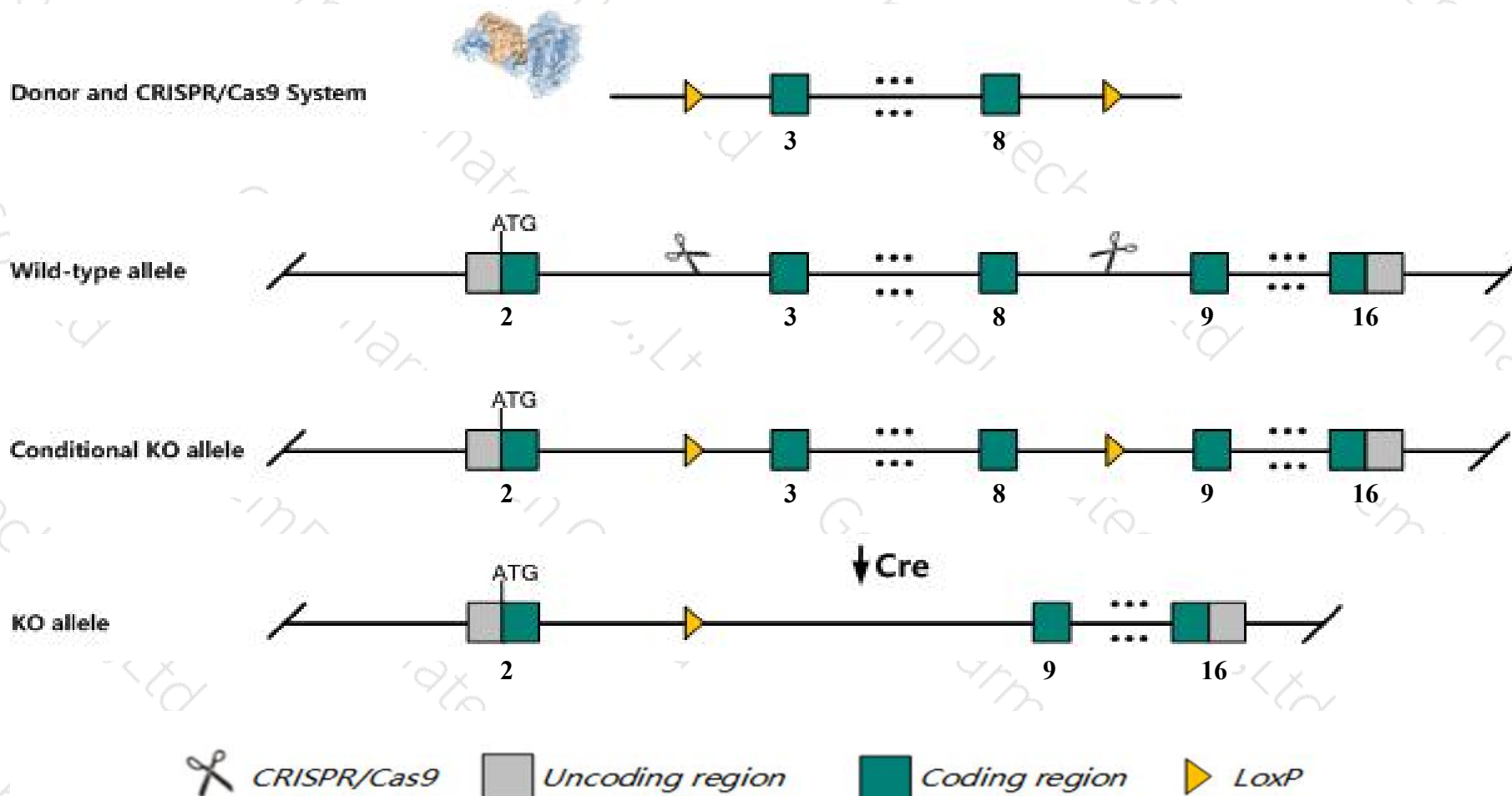
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc8b1* gene. The schematic diagram is as follows:



- The *Slc8b1* gene has 7 transcripts. According to the structure of *Slc8b1* gene, exon3-exon8 of *Slc8b1*-201 (ENSMUST00000068326.13) transcript is recommended as the knockout region. The region contains 646bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc8b1* 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 *Slc8b1* gene is located on the Chr5. 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)

Slc8b1 solute carrier family 8 (sodium/lithium/calcium exchanger), member B1 [Mus musculus (house mouse)]

Gene ID: 170756, updated on 31-Jan-2019

Summary



Official Symbol	Slc8b1 provided by MGI
Official Full Name	solute carrier family 8 (sodium/lithium/calcium exchanger), member B1 provided by MGI
Primary source	MGI:MGI:2180781
See related	Ensembl:ENSMUSG000000032754
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	AF261233, NCKX6, NCLX, Slc24a6
Expression	Broad expression in colon adult (RPKM 34.9), spleen adult (RPKM 21.7) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

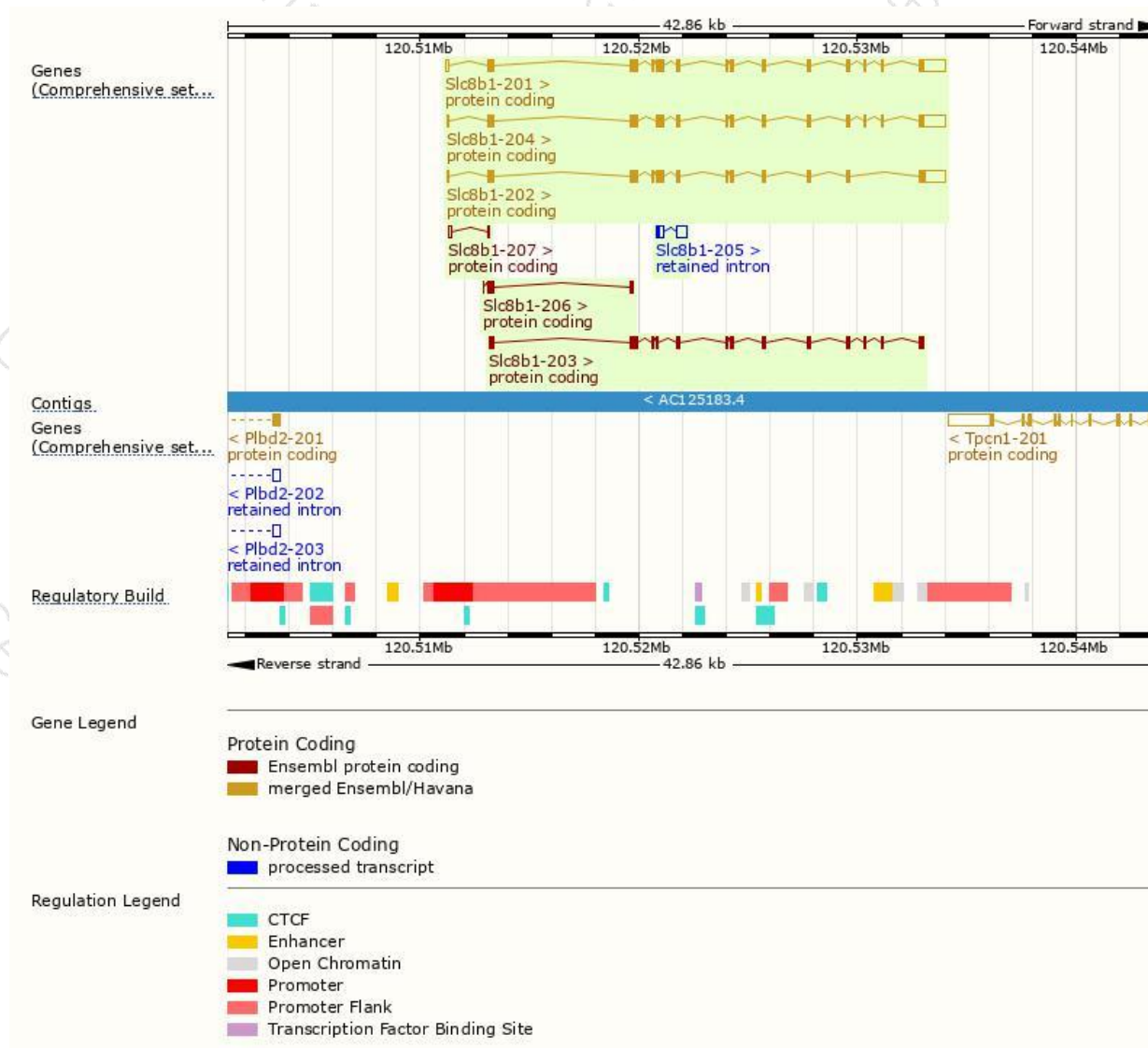
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc8b1-201	ENSMUST00000068326.13	2898	585aa	Protein coding	CCDS39238	Q925Q3	TSL:1 GENCODE basic APPRIS P1
Slc8b1-204	ENSMUST00000111890.8	2775	568aa	Protein coding	CCDS51634	Q925Q3	TSL:1 GENCODE basic
Slc8b1-202	ENSMUST00000076051.11	2661	552aa	Protein coding	CCDS51633	Q925Q3	TSL:1 GENCODE basic
Slc8b1-203	ENSMUST00000111889.1	1624	529aa	Protein coding	-	D3Z226	TSL:5 GENCODE basic
Slc8b1-206	ENSMUST00000140329.1	378	92aa	Protein coding	-	D3Z5E7	CDS 3' incomplete TSL:3
Slc8b1-207	ENSMUST00000147496.1	239	4aa	Protein coding	-	-	CDS 3' incomplete TSL:5
Slc8b1-205	ENSMUST00000123326.1	743	No protein	Retained intron	-	-	TSL:3

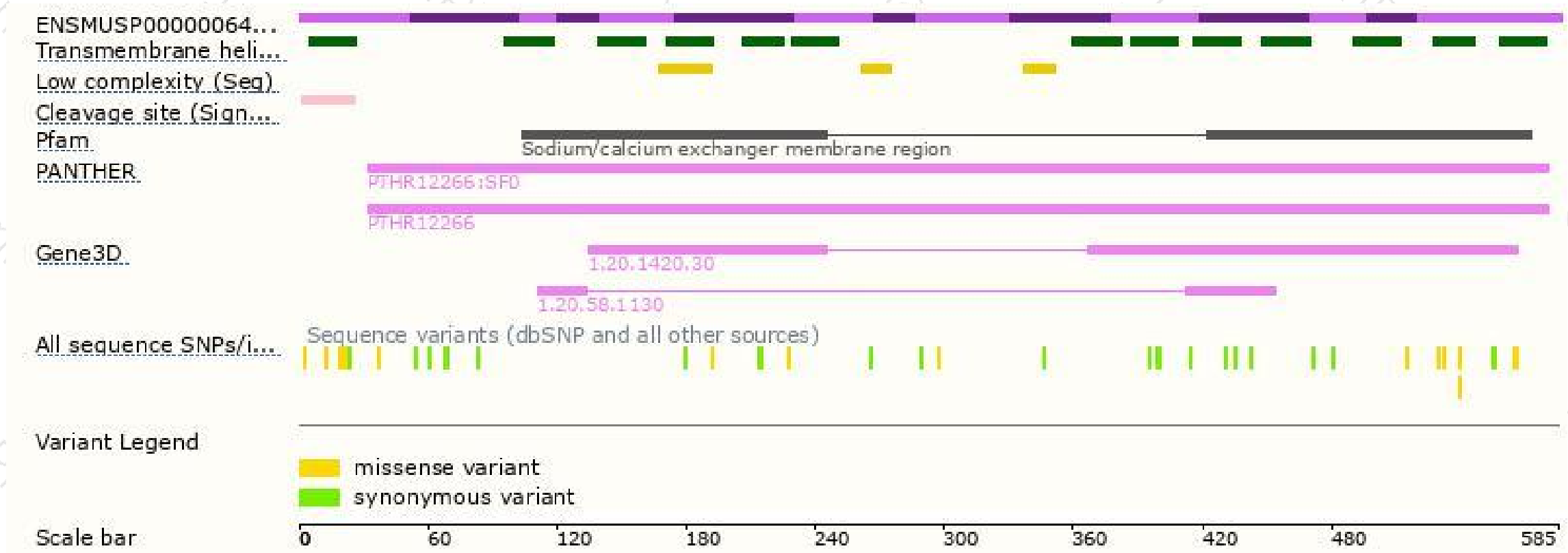
The strategy is based on the design of *Slc8b1-201* transcript,The transcription is shown below



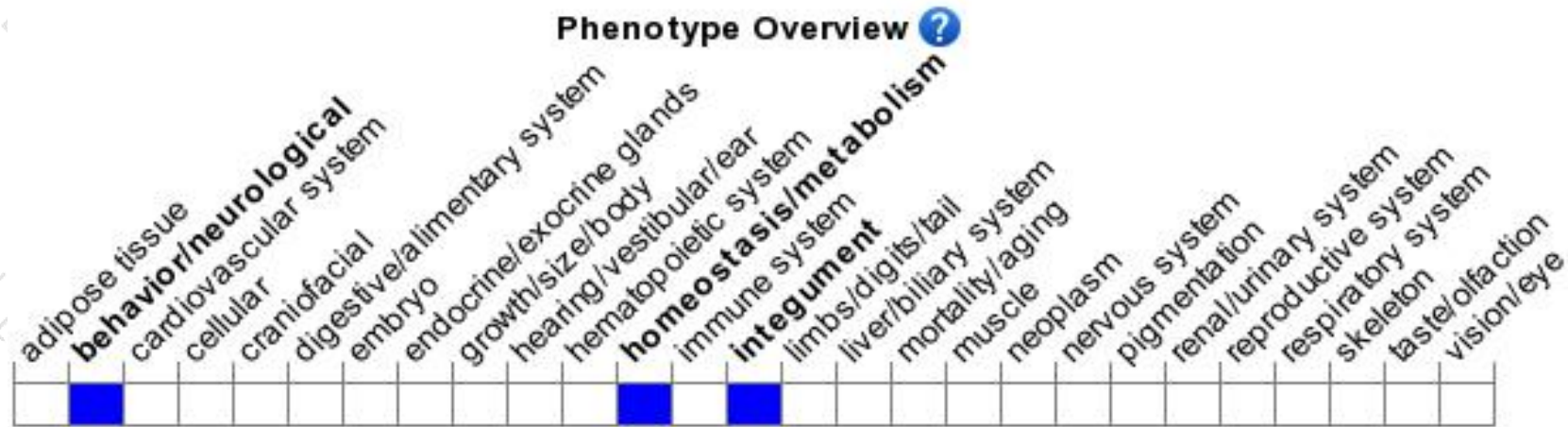
Genomic location distribution



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/>).

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

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