Slc8b1 Cas9-KO Strategy

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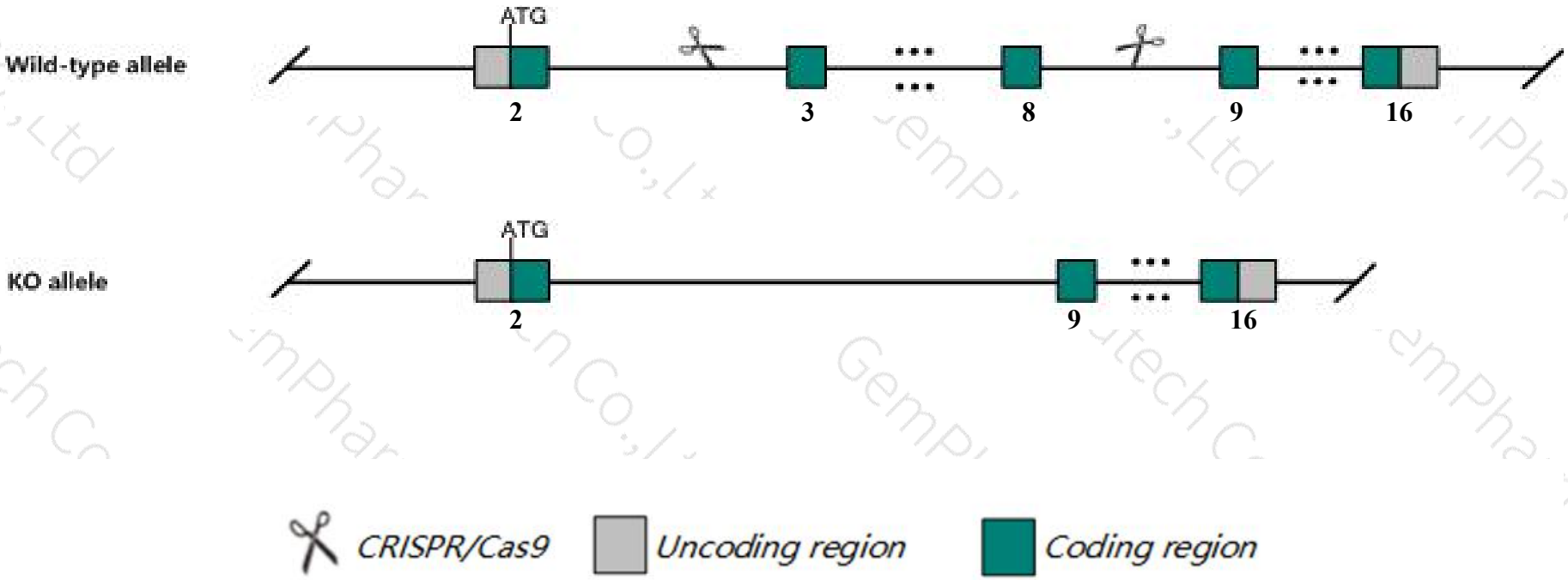
Project Overview

Project Name	***Slc8b1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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



Technical routes

➢ 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

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

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

Summary

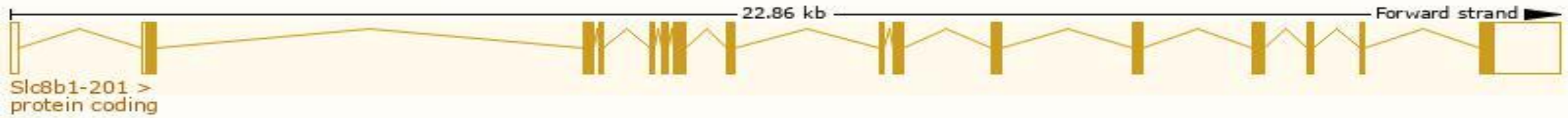
Official Symbol	Slc8b1 provided by MGI
Official Full Name	solute carrier family 8 (sodium/lithium/calcium exchanger), member B1 provided by MGI
Primary source	MGI:MGI:2180781
See related	Ensembl:ENSMUSG00000032754
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; 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）

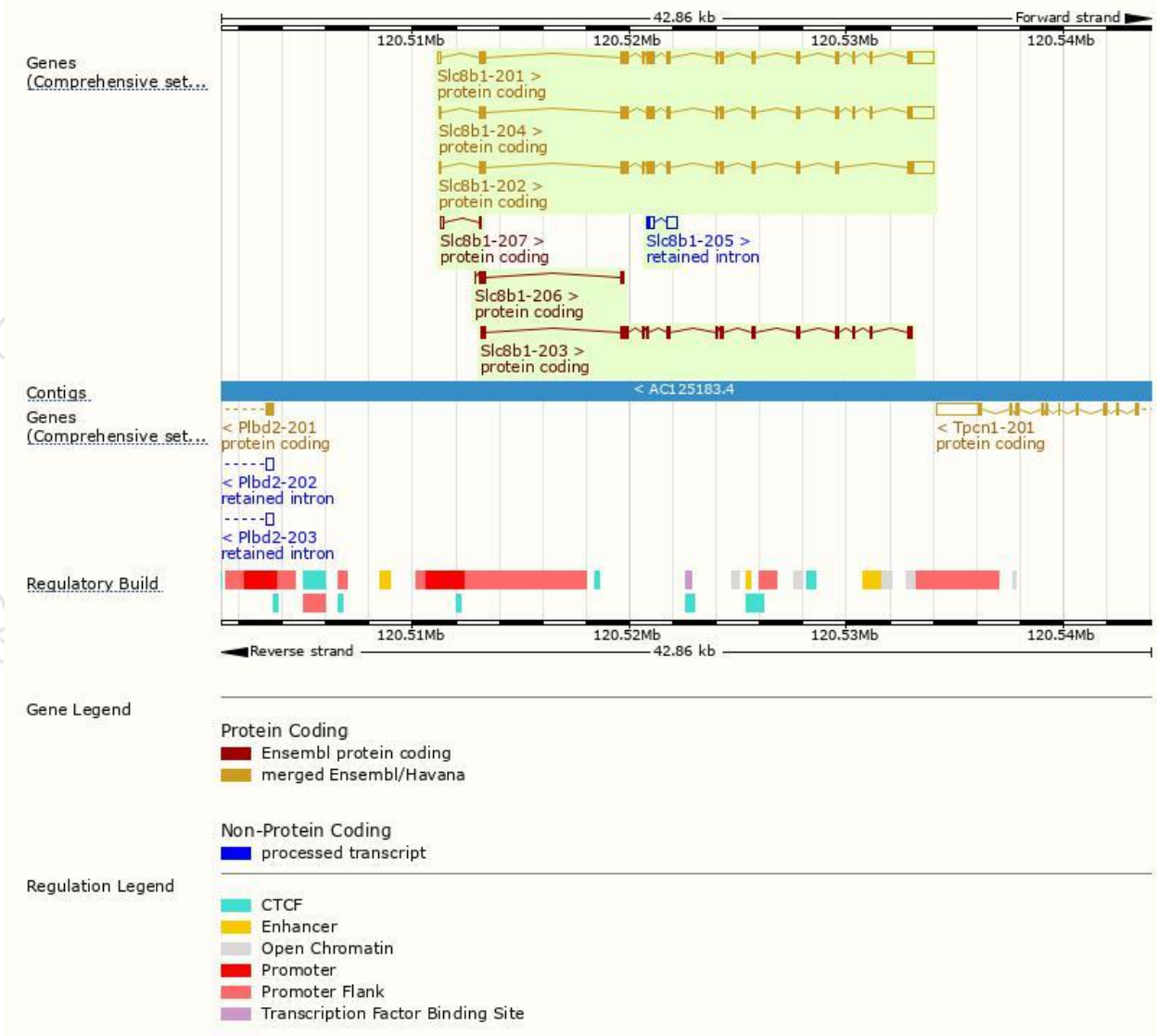
The gene has 7 transcripts,all transcripts are shown below:

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

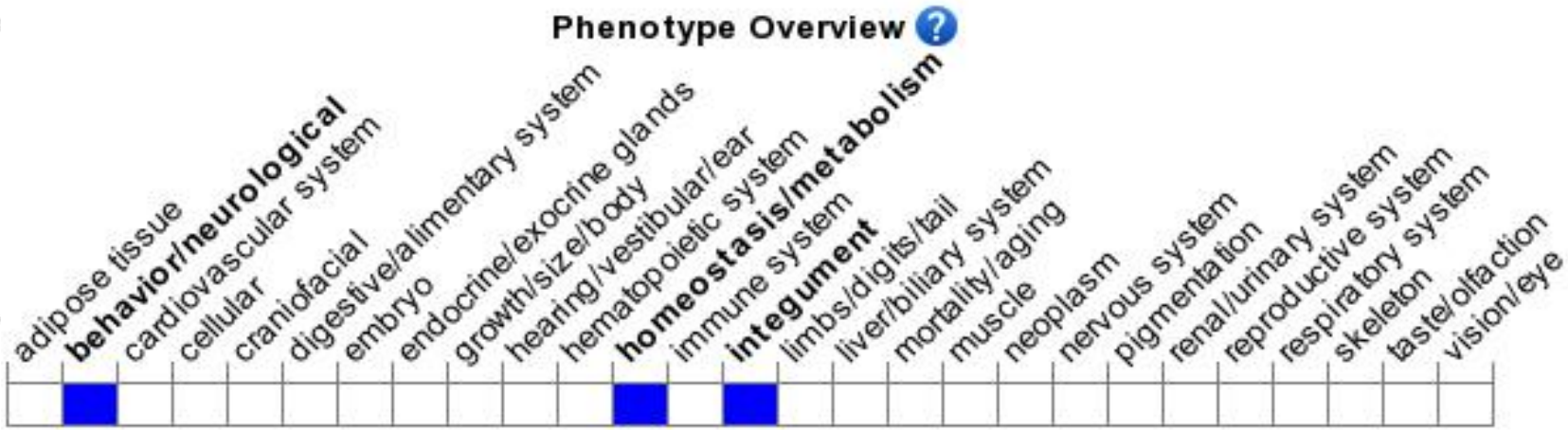


Genomic location distribution



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/).

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

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