

Slc5a12 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Slc5a12

Project type

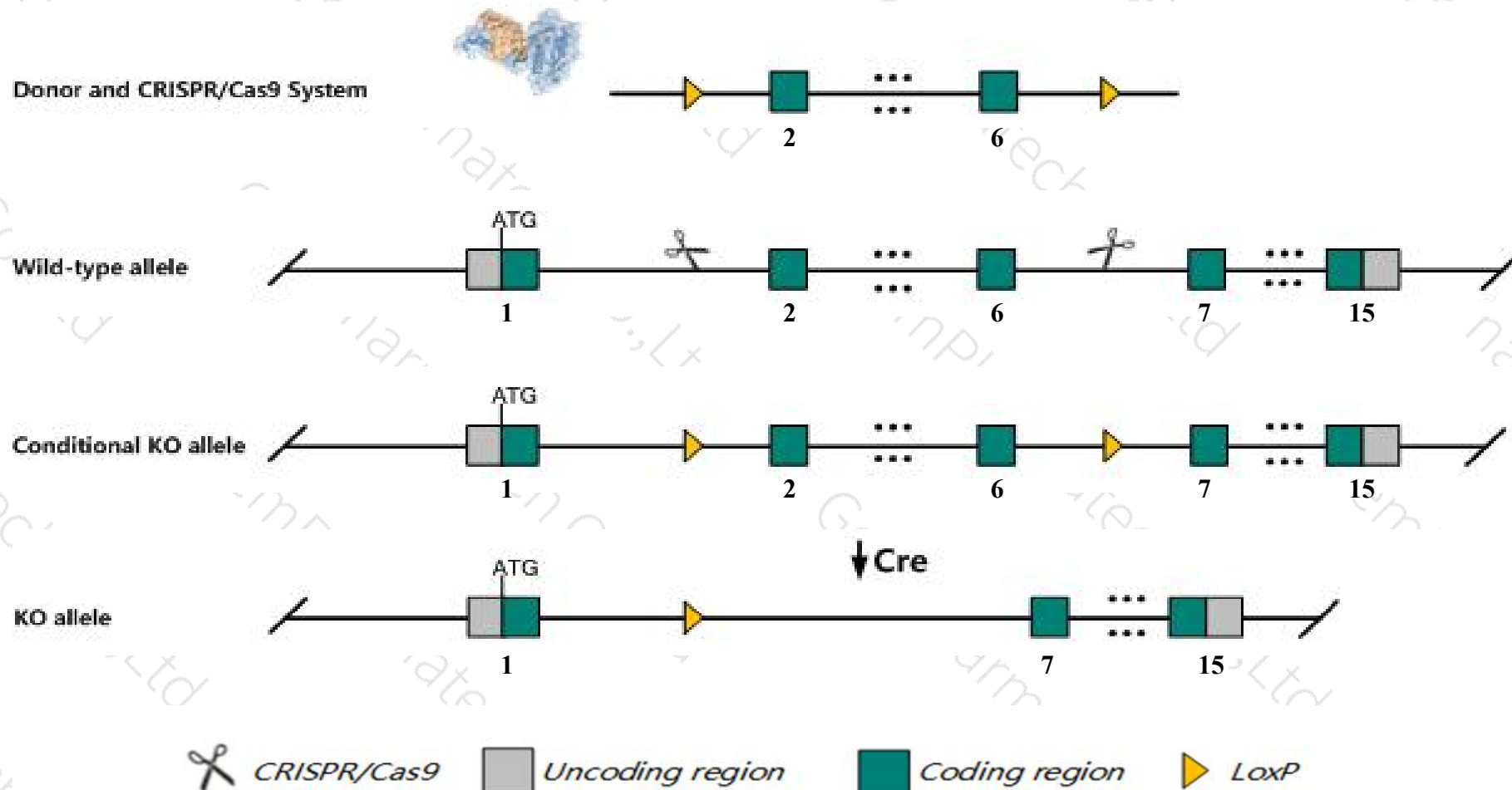
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc5a12* gene. The schematic diagram is as follows:



- The *Slc5a12* gene has 5 transcripts. According to the structure of *Slc5a12* gene, exon2-exon6 of *Slc5a12-201* (ENSMUST00000045972.12) transcript is recommended as the knockout region. The region contains 482bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc5a12* 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 *Slc5a12* 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)

Slc5a12 solute carrier family 5 (sodium/glucose cotransporter), member 12 [Mus musculus (house mouse)]

Gene ID: 241612, updated on 31-Jan-2019

Summary



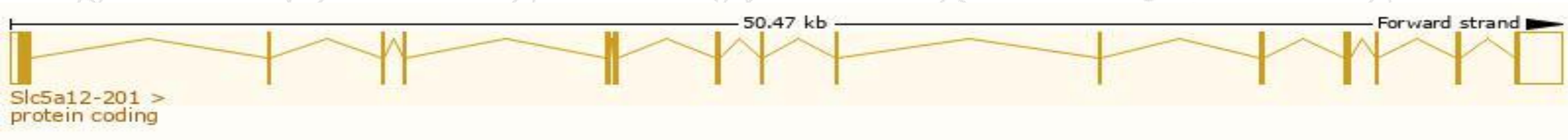
Official Symbol	Slc5a12 provided by MGI
Official Full Name	solute carrier family 5 (sodium/glucose cotransporter), member 12 provided by MGI
Primary source	MGI:MGI:2138890
See related	Ensembl:ENSMUSG000000041644
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI315119, D630015G19, SMCT2
Expression	Restricted expression toward kidney adult (RPKM 48.3) See more
Orthologs	human all

Transcript information (Ensembl)

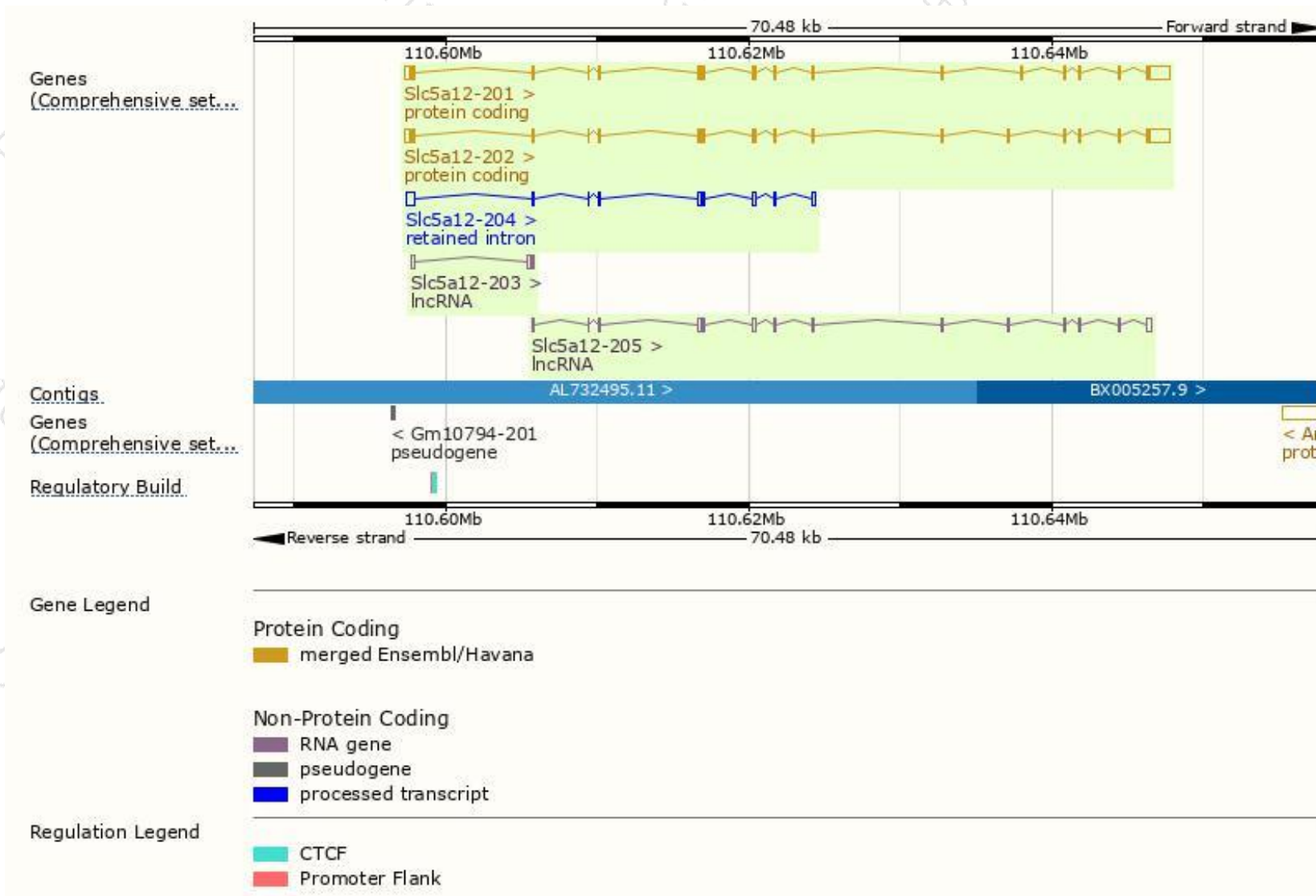
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc5a12-201	ENSMUST00000045972.12	3529	623aa	Protein coding	CCDS16512	Q49B93	TSL:1 GENCODE basic
Slc5a12-202	ENSMUST00000111026.2	3518	619aa	Protein coding	CCDS50656	B9EJ03 Q49B93	TSL:1 GENCODE basic APPRIS P1
Slc5a12-204	ENSMUST00000138497.7	1527	No protein	Retained intron	-	-	TSL:5
Slc5a12-205	ENSMUST00000146664.1	1693	No protein	lncRNA	-	-	TSL:5
Slc5a12-203	ENSMUST00000127822.7	527	No protein	lncRNA	-	-	TSL:3

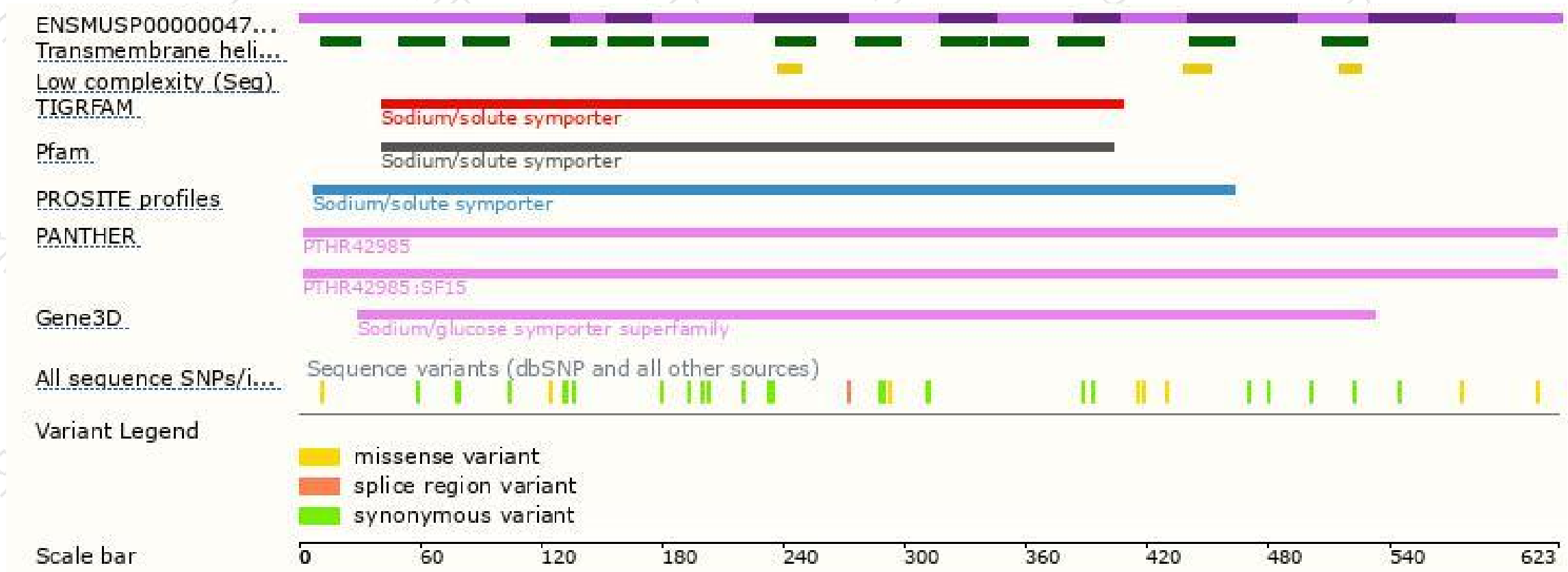
The strategy is based on the design of *Slc5a12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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