

Slc10a1 Cas9-CKO Strategy

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Project Overview

Project Name

Slc10a1

Project type

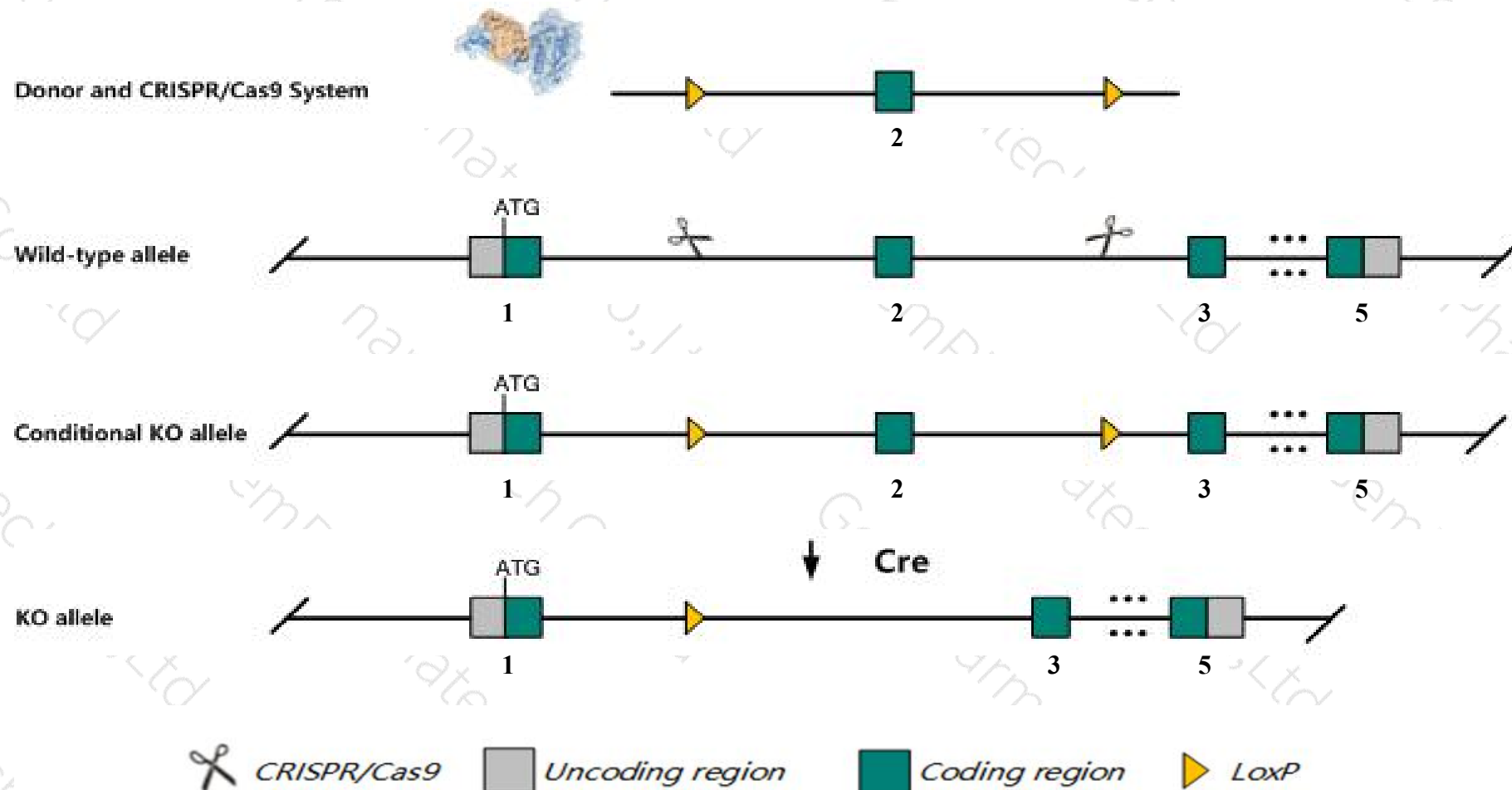
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc10a1* gene. The schematic diagram is as follows:



Technical routes

- The *Slc10a1* gene has 4 transcripts. According to the structure of *Slc10a1* gene, exon2 of *Slc10a1-201*(ENSMUST00000095572.4) transcript is recommended as the knockout region. The region contains 211bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc10a1* 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 *Slc10a1* gene is located on the Chr12. 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)

Slc10a1 solute carrier family 10 (sodium/bile acid cotransporter family), member 1 [Mus musculus (house mouse)]

Gene ID: 20493, updated on 22-Mar-2020

Summary



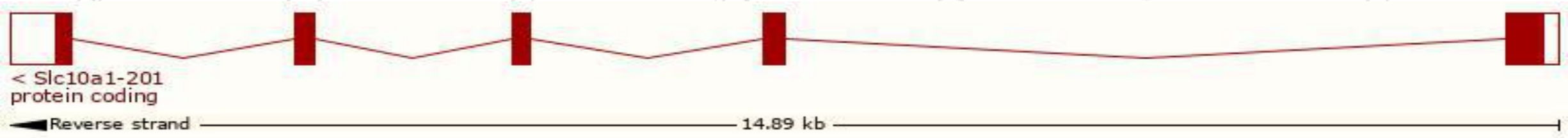
Official Symbol	Slc10a1 provided by MGI
Official Full Name	solute carrier family 10 (sodium/bile acid cotransporter family), member 1 provided by MGI
Primary source	MGI:MGI:97379
See related	Ensembl:ENSMUSG00000021135
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ntcp
Expression	Biased expression in liver adult (RPKM 329.4) and liver E18 (RPKM 155.9) See more
Orthologs	human all

Transcript information (Ensembl)

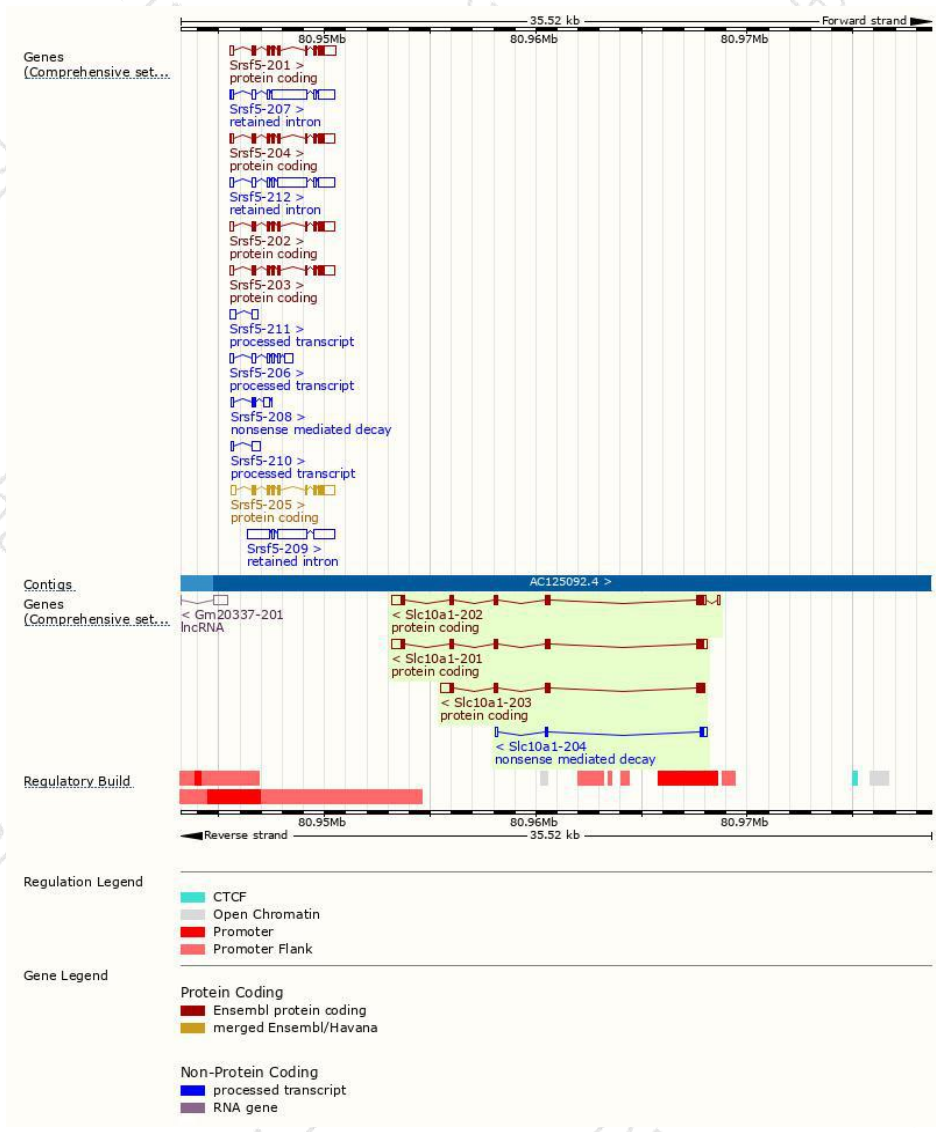
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc10a1-202	ENSMUST00000218162.1	1749	362aa	Protein coding	CCDS49101	O08705	TSL:1 GENCODE basic APPRIS P2
Slc10a1-201	ENSMUST00000095572.4	1674	362aa	Protein coding	CCDS49101	O08705	TSL:1 GENCODE basic APPRIS P2
Slc10a1-203	ENSMUST00000218342.1	1411	317aa	Protein coding	-	O35940	TSL:1 GENCODE basic APPRIS ALT2
Slc10a1-204	ENSMUST00000220266.1	518	66aa	Nonsense mediated decay	-	A0A1W2P719	TSL:3

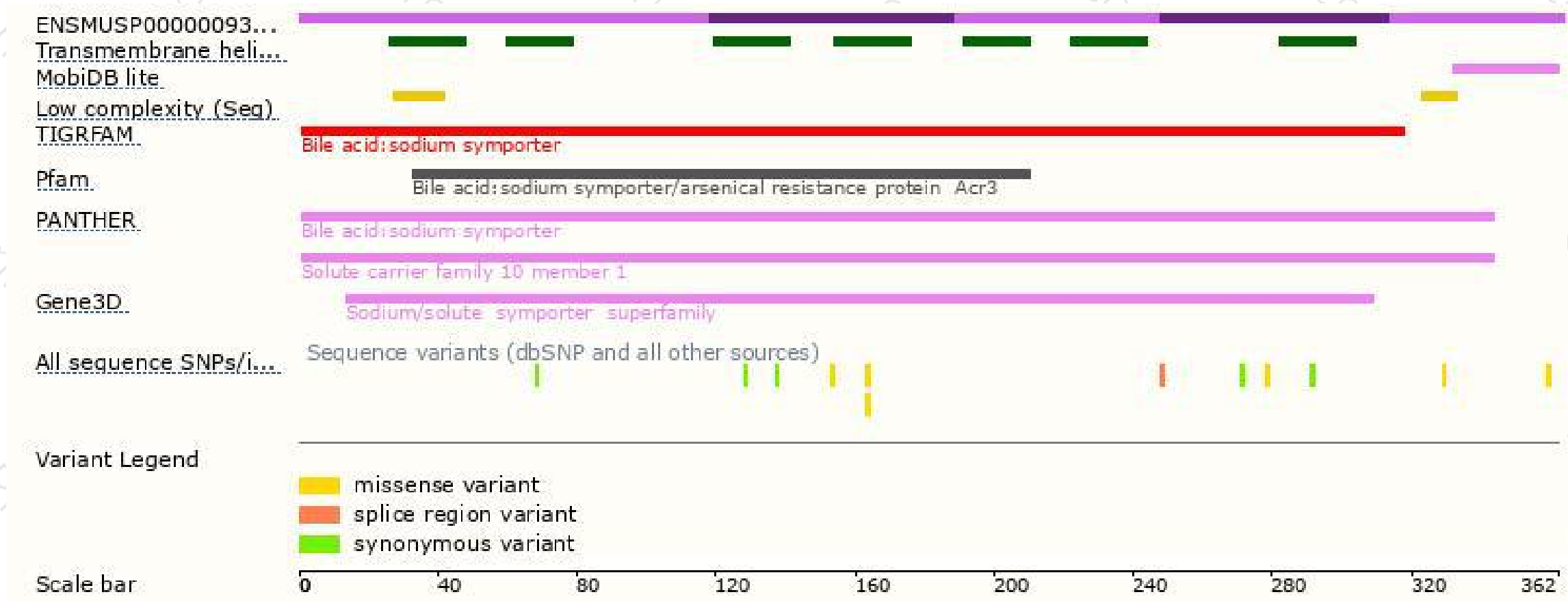
The strategy is based on the design of *Slc10a1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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