

Slco4a1 Cas9-CKO Strategy

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Project Overview

Project Name

Slco4a1

Project type

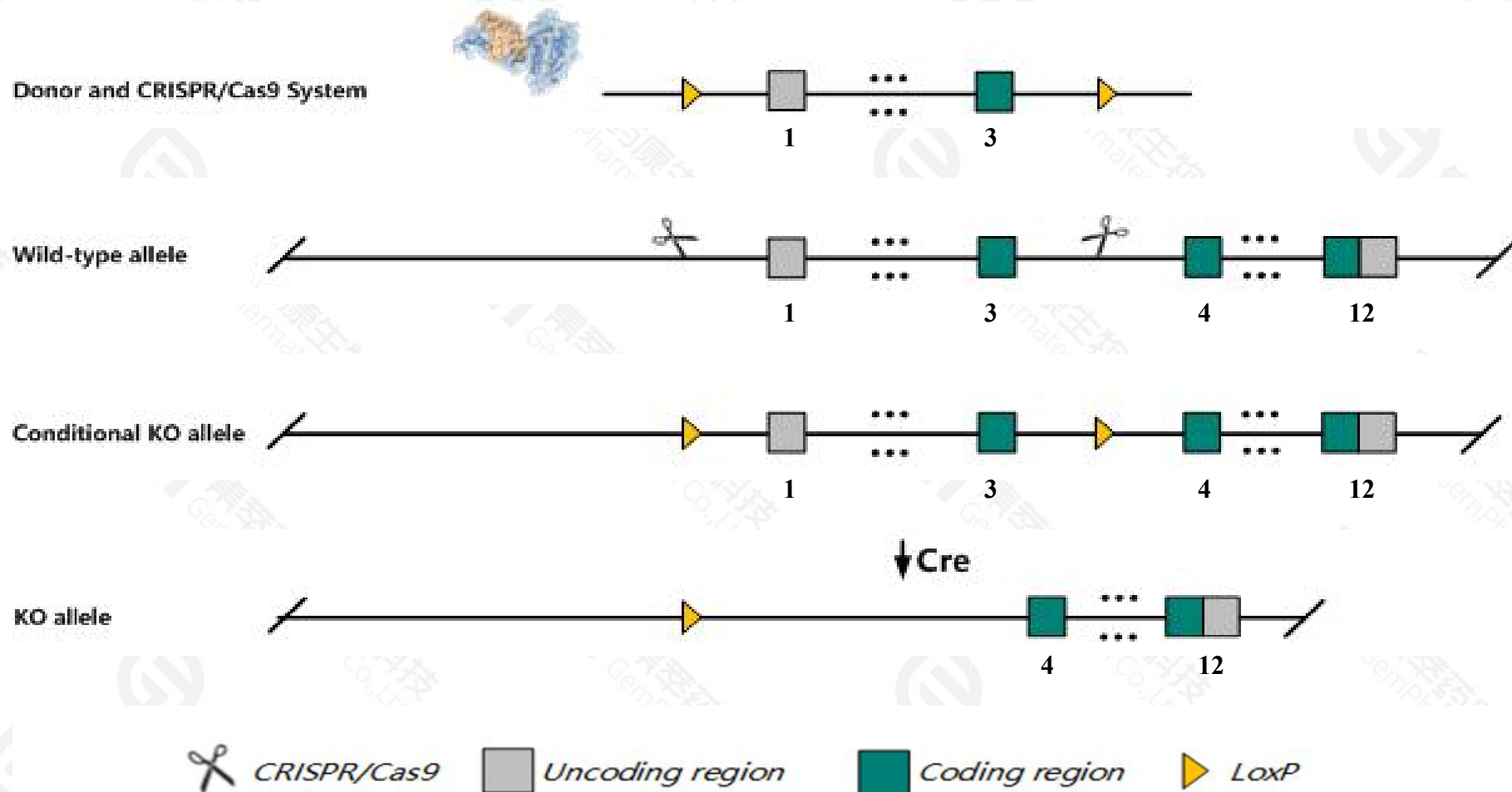
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slco4a1* gene. The schematic diagram is as follows:



Technical routes

- The *Slco4a1* gene has 5 transcripts. According to the structure of *Slco4a1* gene, exon1-exon3 of *Slco4a1-201*(ENSMUST00000038225.8) transcript is recommended as the knockout region. The region contains 893bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slco4a1* 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.

- The *Slco4a1* 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)

Slco4a1 solute carrier organic anion transporter family, member 4a1 [Mus musculus (house mouse)]

Gene ID: 108115, updated on 17-Feb-2021

Summary



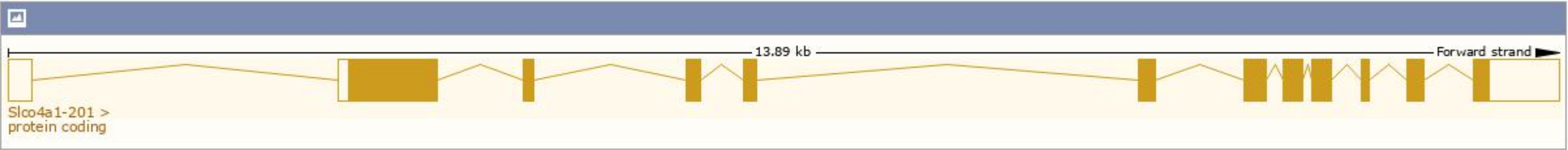
Official Symbol	Slco4a1 provided by MGI
Official Full Name	solute carrier organic anion transporter family, member 4a1 provided by MGI
Primary source	MGI:MGI:1351866
See related	Ensembl:ENSMUSG00000038963
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	OAT, OATP-E, Slc21, Slc21a12
Expression	Broad expression in kidney adult (RPKM 15.2), genital fat pad adult (RPKM 12.7) and 15 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

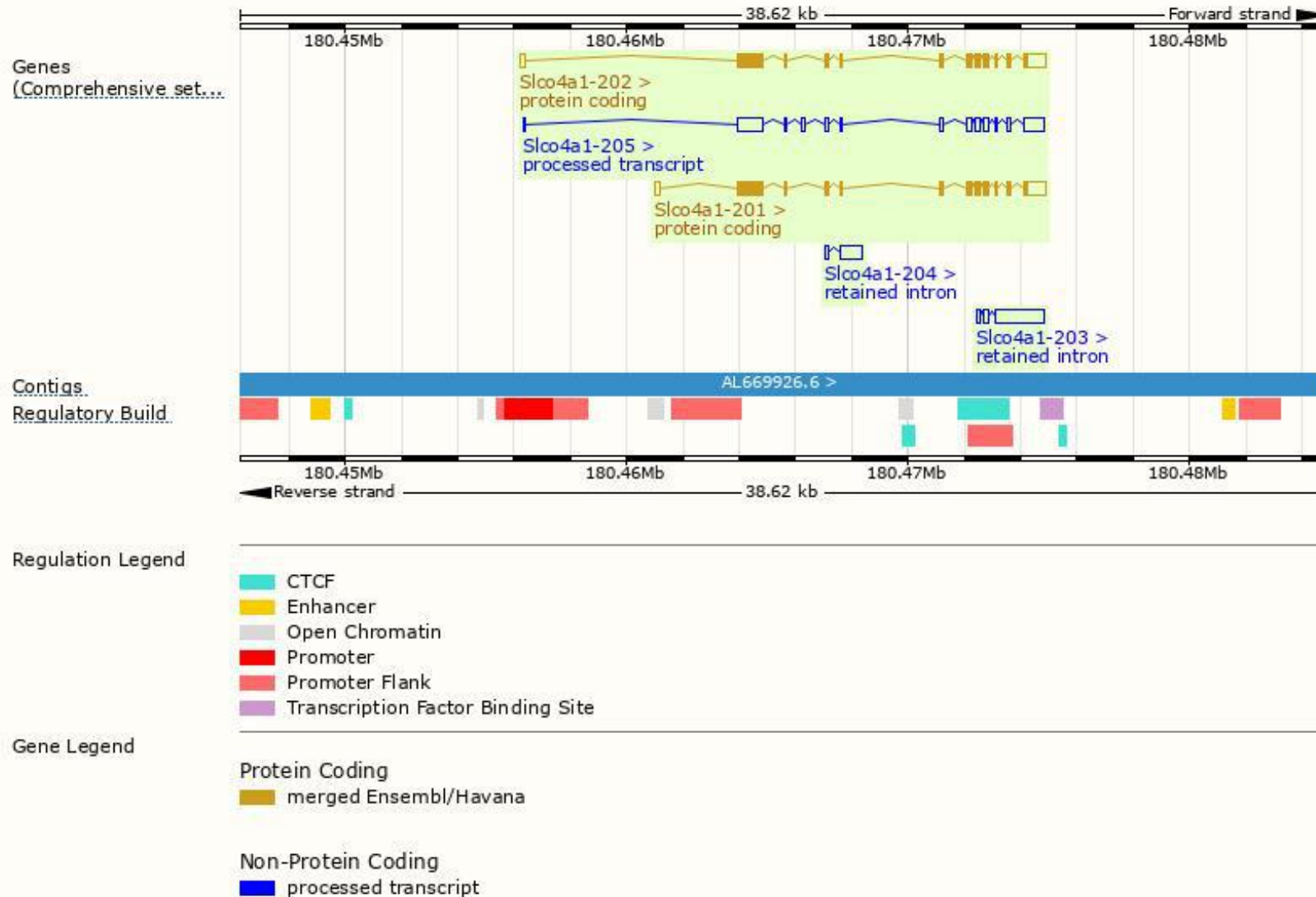
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slco4a1-201	ENSMUST00000038225.8	3101	723aa	Protein coding	CCDS17176		TSL:1 , GENCODE basic , APPRIS P1 ,
Slco4a1-202	ENSMUST00000038259.13	3010	723aa	Protein coding	CCDS17176		TSL:1 , GENCODE basic , APPRIS P1 ,
Slco4a1-205	ENSMUST00000139902.8	3002	No protein	Processed transcript	-		TSL:5 ,
Slco4a1-203	ENSMUST00000128367.2	2065	No protein	Retained intron	-		TSL:1 ,
Slco4a1-204	ENSMUST00000138446.2	901	No protein	Retained intron	-		TSL:3 ,

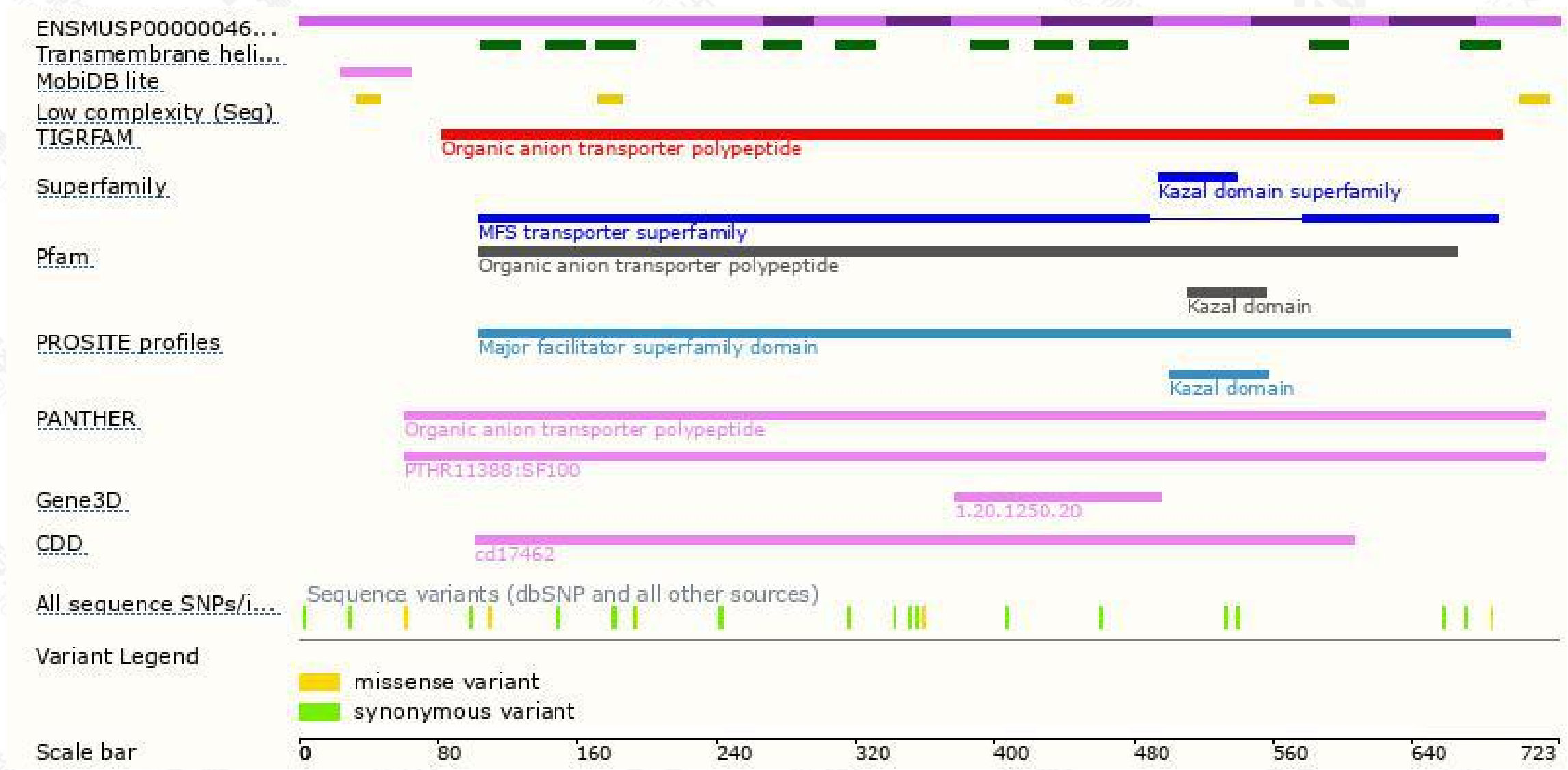
The strategy is based on the design of *Slco4a1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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