

Slc22a17 Cas9-CKO Strategy

Designer: Hui Bao

Reviewer: Yun Li

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Overview

Target Gene Name

- *Slc22a17*

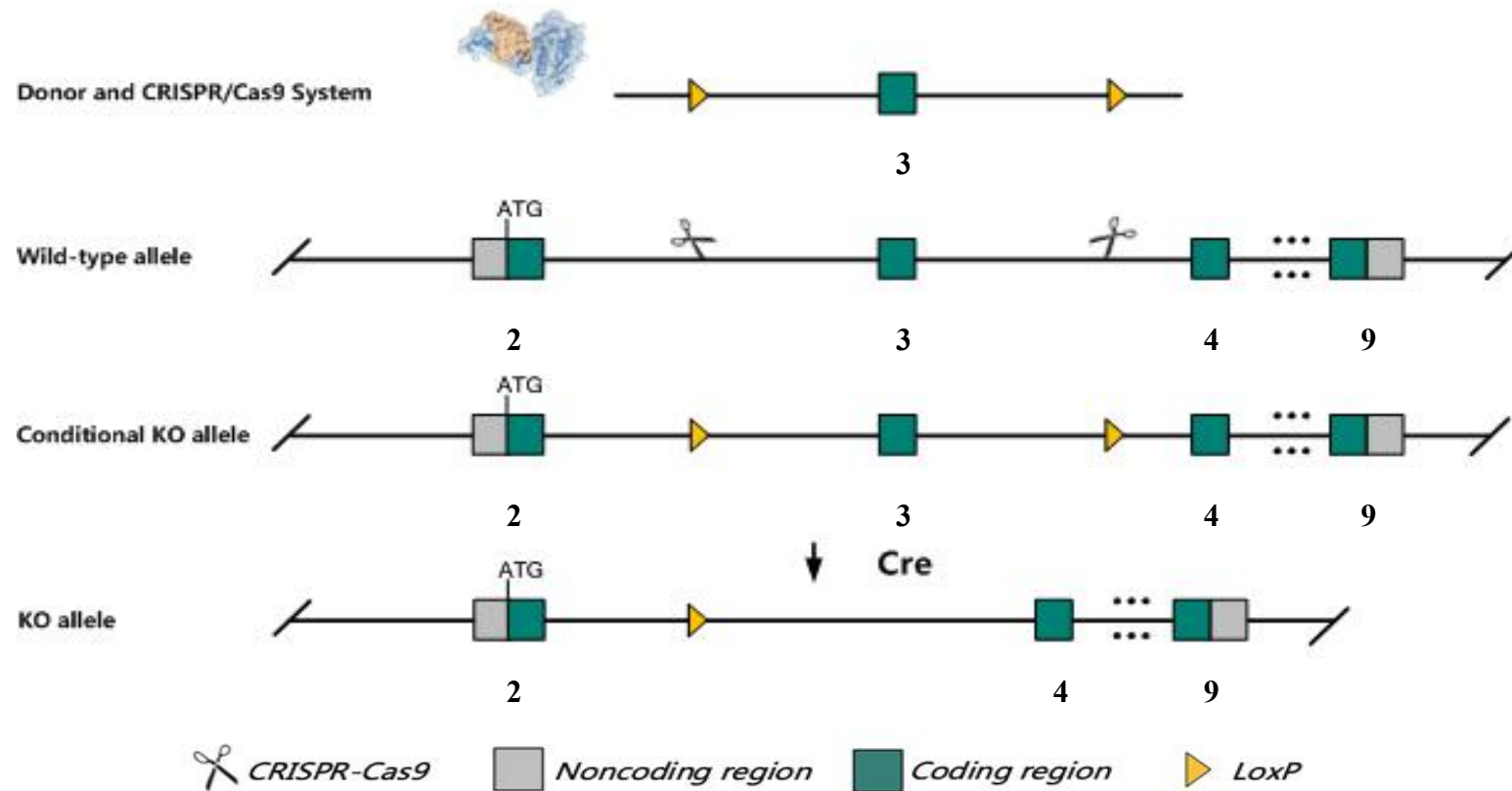
Project Type

- Cas9-CKO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Schematic representation of CRISPR-Cas9 engineering used to edit the *Slc22a17* gene.

Technical Information

- The *Slc22a17* gene has 12 transcripts. According to the structure of *Slc22a17* gene, exon3 of *Slc22a17-201*(ENSMUST00000050772.10) transcript is recommended as the knockout region. The region contains 155bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Slc22a17* 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.

Gene Information

Slc22a17 solute carrier family 22 (organic cation transporter), member 17 [*Mus musculus* (house mouse)]

Gene ID: 59049, updated on 4-Apr-2023

Summary	
Official Symbol	Slc22a17 provided by MGI
Official Full Name	solute carrier family 22 (organic cation transporter), member 17 provided by MGI
Primary source	MGI:MGI:1926225
See related	Ensembl:ENSMUSG00000022199 AllianceGenome:MGI:1926225
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	BOIT; Boct; 24p3R; 1700094C23Rik
Summary	Enables transmembrane signaling receptor activity. Involved in siderophore transport. Predicted to be located in plasma membrane. Predicted to be integral component of organelle membrane and integral component of plasma membrane. Is expressed in several structures, including alimentary system; central nervous system; genitourinary system; integumental system; and sensory organ. Orthologous to human SLC22A17 (solute carrier family 22 member 17). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Broad expression in CNS E18 (RPKM 137.6), frontal lobe adult (RPKM 136.9) and 18 other tissues See more
Orthologs	human all

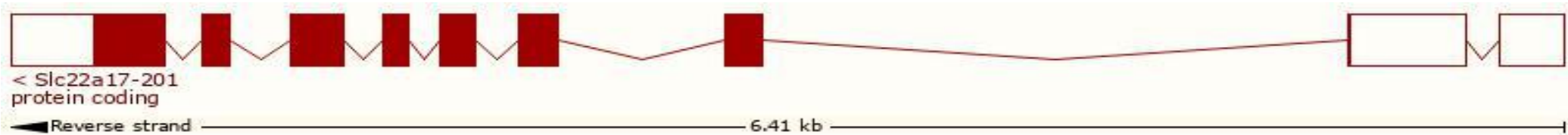
Source: <https://www.ncbi.nlm.nih.gov/>

Transcript Information

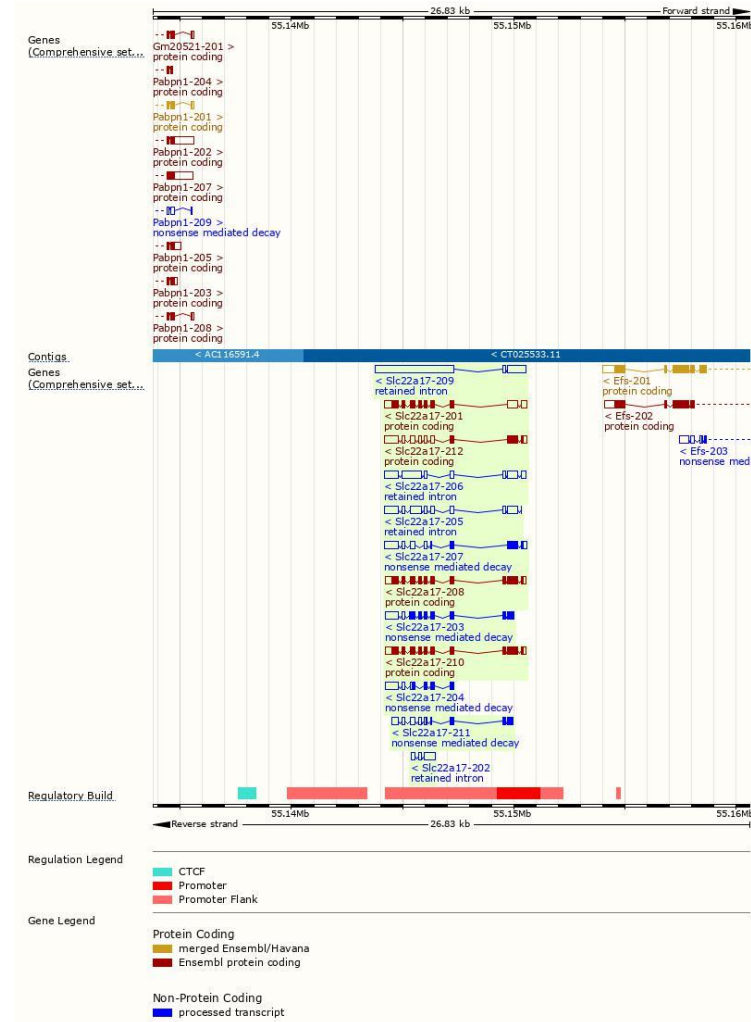
The gene has 12 transcripts, all transcripts are shown below:

Show/hide columns (1 hidden)							Filter	
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags	
ENSMUST00000228495.3	Slc22a17-210	2340	627aa	Protein coding		A0A2I3BQG7	Ensembl Canonical	GENCODE basic APPRIS P4
ENSMUST00000228119.3	Slc22a17-208	2348	626aa	Protein coding		A0A2I3BQL1	GENCODE basic	APPRIS ALT2
ENSMUST00000050772.10	Slc22a17-201	2294	401aa	Protein coding	CCDS36924	Q9D9E0-1	GENCODE basic	TSL:1
ENSMUST00000231305.2	Slc22a17-212	2290	240aa	Protein coding		A0A2I3BPI6	GENCODE basic	
ENSMUST00000227880.3	Slc22a17-207	2041	240aa	Nonsense mediated decay		A0A2I3BPI6	-	
ENSMUST00000226467.3	Slc22a17-203	1999	418aa	Nonsense mediated decay		A0A2I3BPH7	CDS 5' incomplete	
ENSMUST00000228588.2	Slc22a17-211	1446	209aa	Nonsense mediated decay		A0A2I3BR74	CDS 5' incomplete	
ENSMUST00000226690.2	Slc22a17-204	1406	198aa	Nonsense mediated decay		A0A2I3BRR2	CDS 5' incomplete	
ENSMUST00000228249.2	Slc22a17-209	4488	No protein	Retained intron		-	-	
ENSMUST00000227600.2	Slc22a17-206	2595	No protein	Retained intron		-	-	
ENSMUST00000226718.2	Slc22a17-205	2302	No protein	Retained intron		-	-	
ENSMUST00000226456.2	Slc22a17-202	767	No protein	Retained intron		-	-	

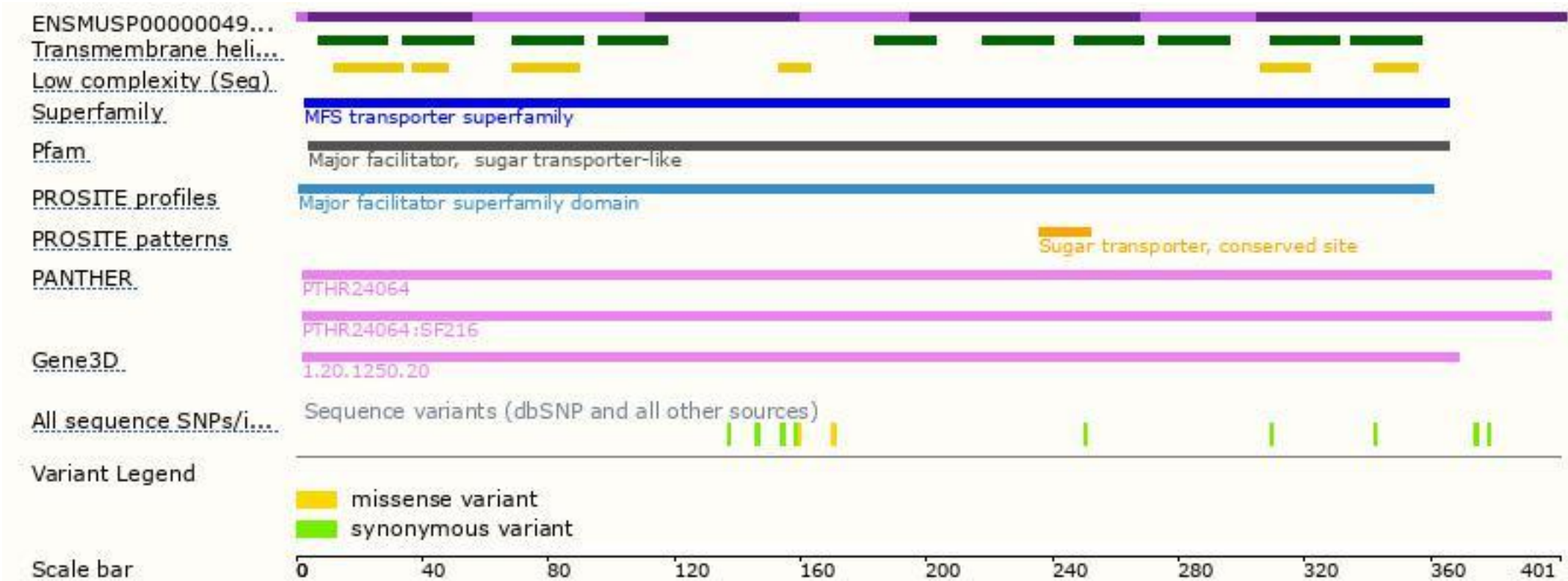
The strategy is based on the design of *Slc22a17-201* transcript, the transcription is shown below:



Genomic Information



Protein Information



Important Information

- The *Slc22a17* gene is located on the Chr14. 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.
- Exon3 of transcript Slc22a17-209 will be destroyed.
- 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.