

Slc44a1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Slc44a1

Project type

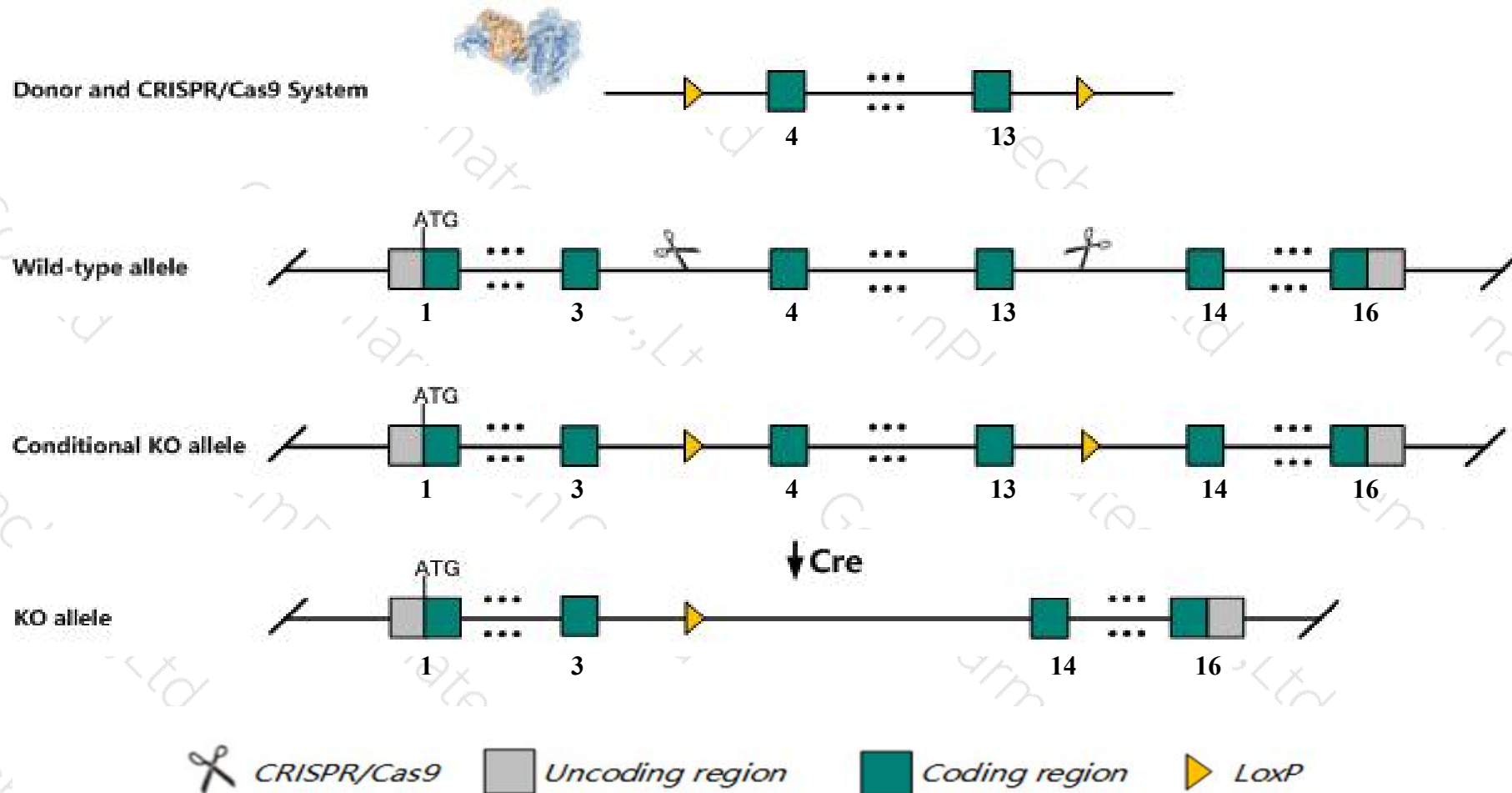
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc44a1* gene. The schematic diagram is as follows:



- The *Slc44a1* gene has 7 transcripts. According to the structure of *Slc44a1* gene, exon4-exon13 of *Slc44a1-201* (ENSMUST00000102911.9) transcript is recommended as the knockout region. The region contains 1363bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc44a1* 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 *Slc44a1* gene is located on the Chr4. 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Slc44a1 solute carrier family 44, member 1 [Mus musculus (house mouse)]

Gene ID: 100434, updated on 31-Jan-2019

Summary



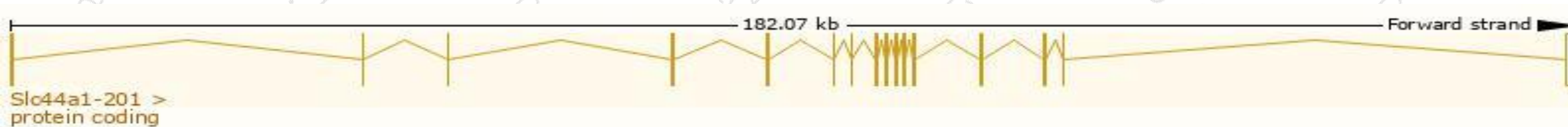
Official Symbol	Slc44a1 provided by MGI
Official Full Name	solute carrier family 44, member 1 provided by MGI
Primary source	MGI:MGI:2140592
See related	Ensembl:ENSMUSG00000028412
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2210409B22Rik, 4833416H08Rik, AW547365, CHTL1, CTL1, Cdw92
Expression	Ubiquitous expression in colon adult (RPKM 21.8), bladder adult (RPKM 12.6) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

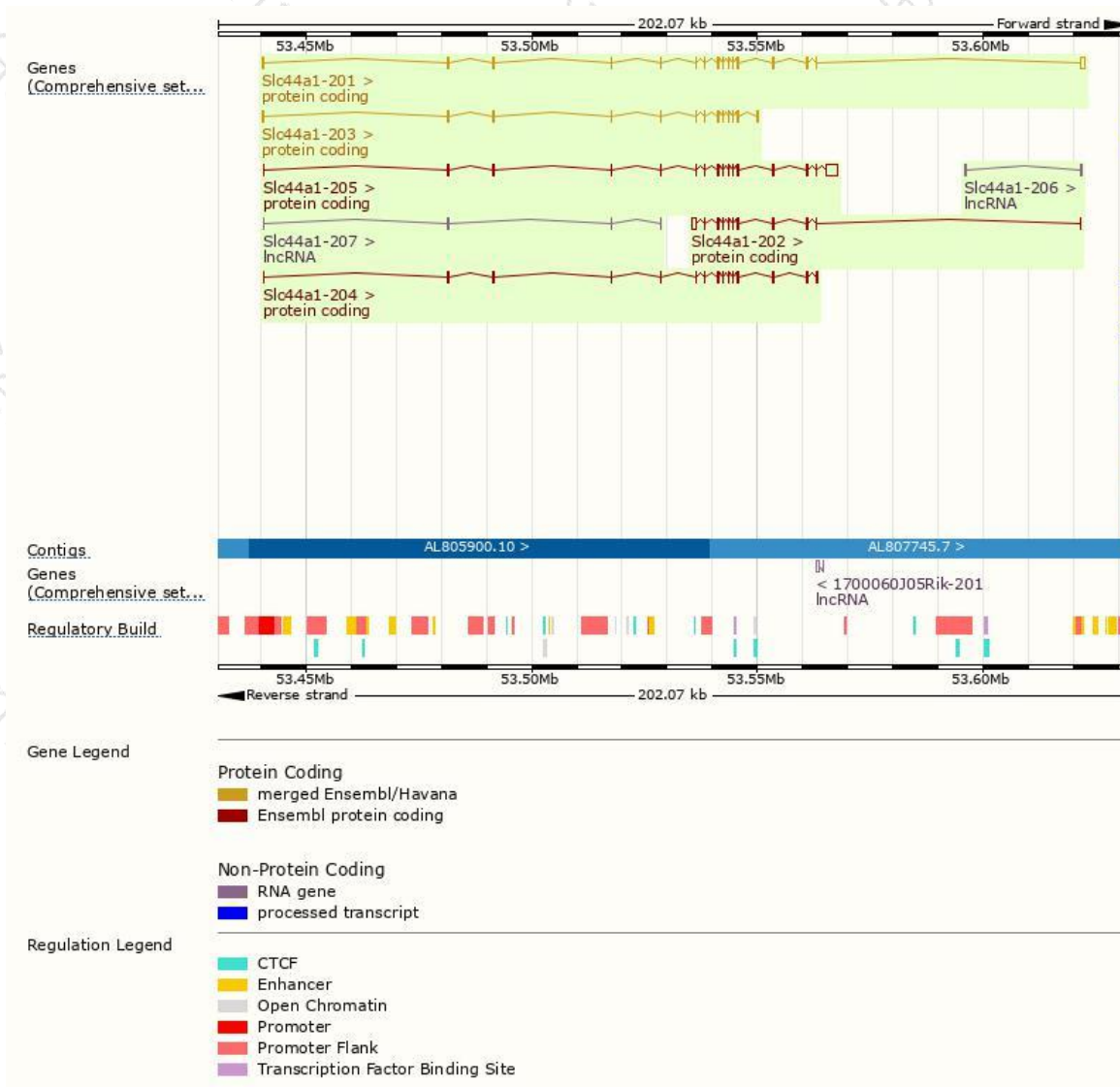
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc44a1-201	ENSMUST00000102911.9	3102	653aa	Protein coding	CCDS18189	Q6X893	TSL:1 GENCODE basic APPRIS P2
Slc44a1-203	ENSMUST00000107646.8	1974	526aa	Protein coding	CCDS51178	A2AMH3	TSL:5 GENCODE basic
Slc44a1-205	ENSMUST00000107651.8	4382	656aa	Protein coding	-	A2AMH5	TSL:5 GENCODE basic APPRIS ALT1
Slc44a1-202	ENSMUST00000107645.1	2365	446aa	Protein coding	-	A2AMH8	TSL:5 GENCODE basic
Slc44a1-204	ENSMUST00000107647.7	2176	718aa	Protein coding	-	A2AMH4	TSL:2 GENCODE basic APPRIS ALT1
Slc44a1-206	ENSMUST00000133582.1	662	No protein	lncRNA	-	-	TSL:3
Slc44a1-207	ENSMUST00000136607.1	328	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Slc44a1-201* transcript, The transcription is shown below



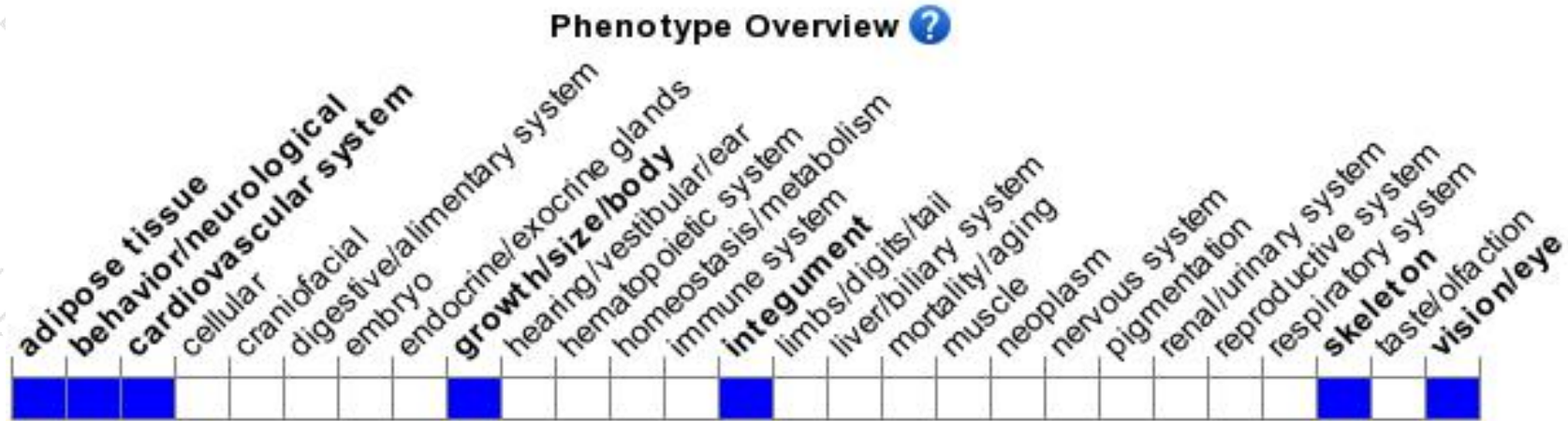
Genomic location distribution



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/>).

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

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