Slc22a2 Cas9-KO Strategy

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Reviewer: Huimin Su

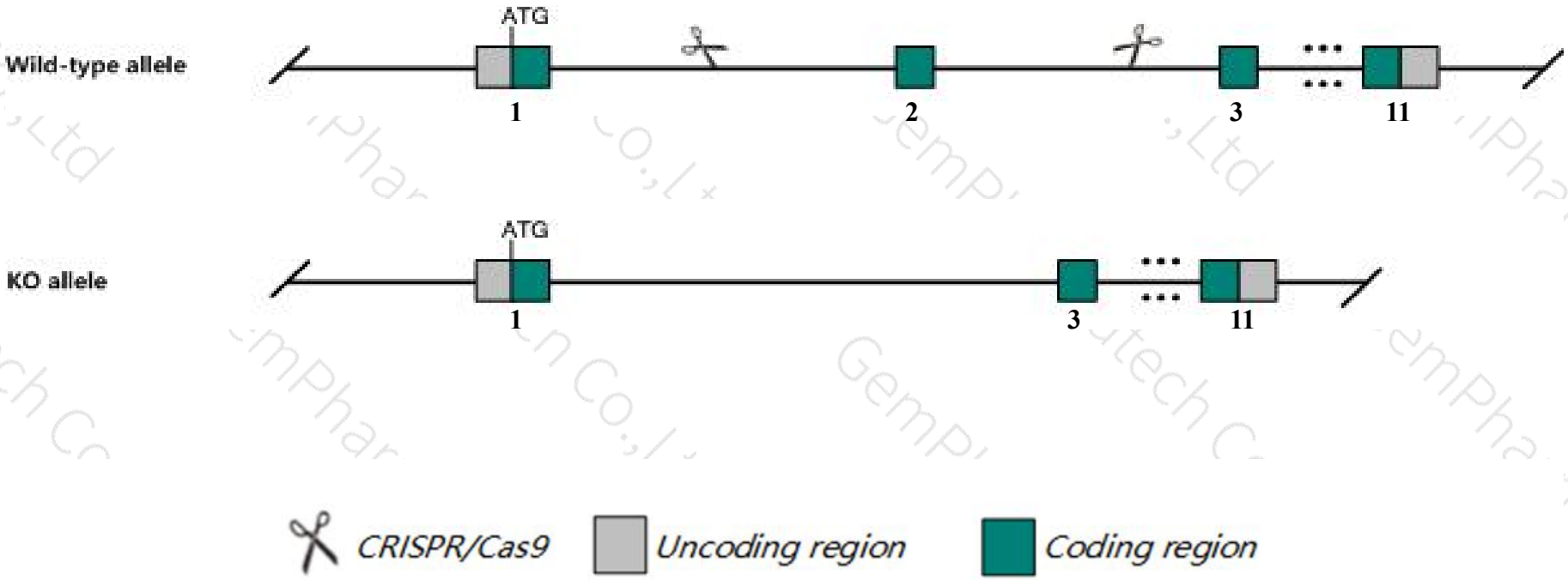
Design Date: 2019-10-23

Project Overview

Project Name	***Slc22a2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc22a2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc22a2* gene has 2 transcripts. According to the structure of *Slc22a2* gene, exon2 of *Slc22a2-201* (ENSMUST00000046959.8) transcript is recommended as the knockout region.The region contains 104bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc22a2* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ According to the existing MGI data,Mice homozygous for a knockout allele are viable and fertile and display no obvious phenotypic abnormalities. No significant defects in the renal secretion of a model organic cation are observed.

➢ The *Slc22a2* gene is located on the Chr17. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information（NCBI）

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Slc22a2 solute carrier family 22 (organic cation transporter), member 2 [Mus musculus (house mouse)]

Gene ID: 20518, updated on 31-Jan-2019

Summary

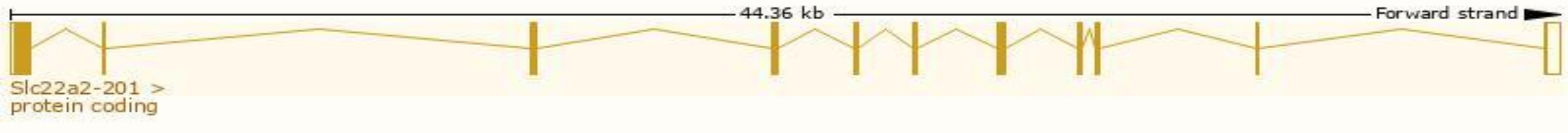
Official Symbol	Slc22a2 provided by MGI
Official Full Name	solute carrier family 22 (organic cation transporter), member 2 provided byMGI
Primary source	MGI:MGI:1335072
See related	Ensembl:ENSMUSG00000040966
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Oct2, Orct2
Expression	Biased expression in kidney adult (RPKM 64.5), liver adult (RPKM 7.4) and 1 other tissueSee more
Orthologs	human all

Transcript information（Ensembl）

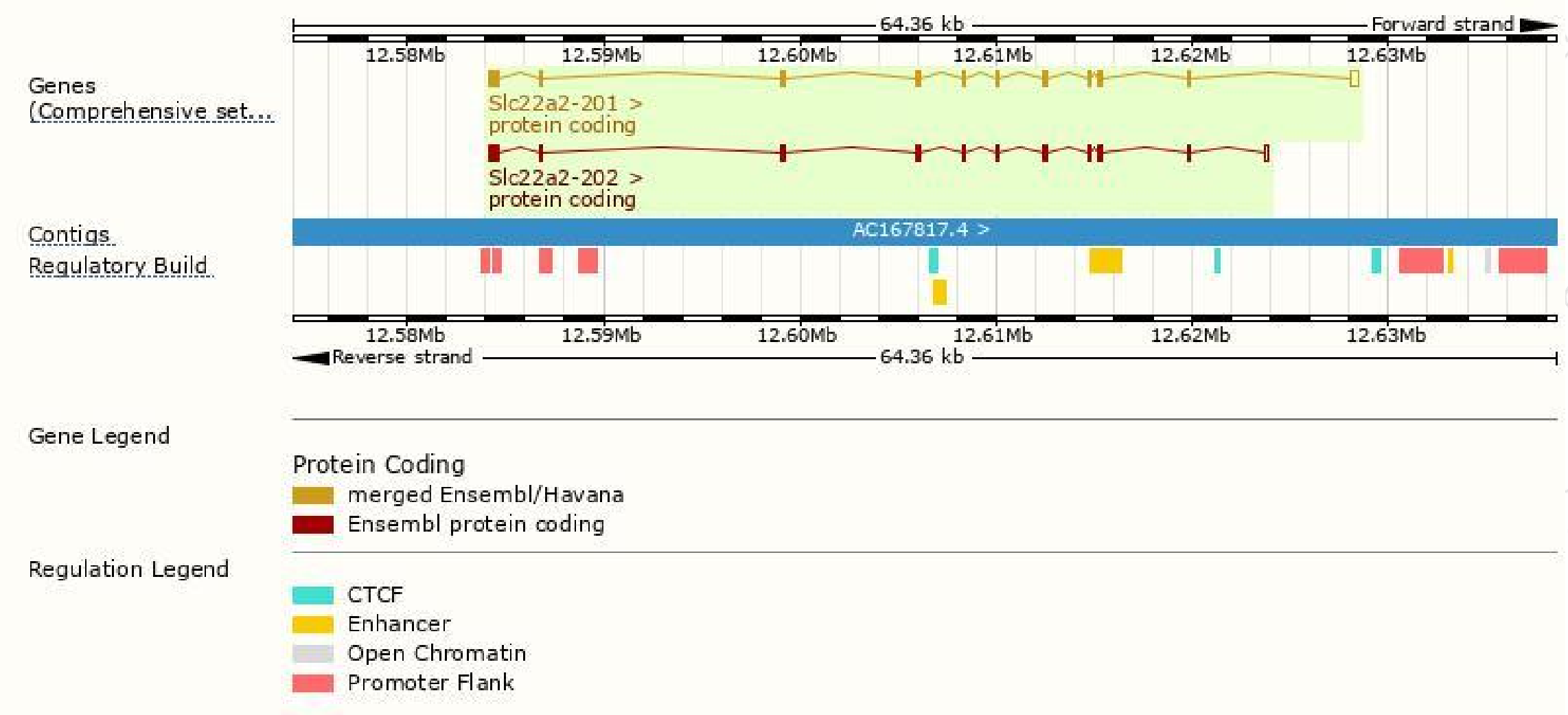
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc22a2-201	ENSMUST00000046959.8	2195	553aa	Protein coding	CCDS28392	O70577	TSL:1 GENCODE basic APPRIS P1
Slc22a2-202	ENSMUST00000233066.1	1977	544aa	Protein coding	-	O70577	GENCODE basic

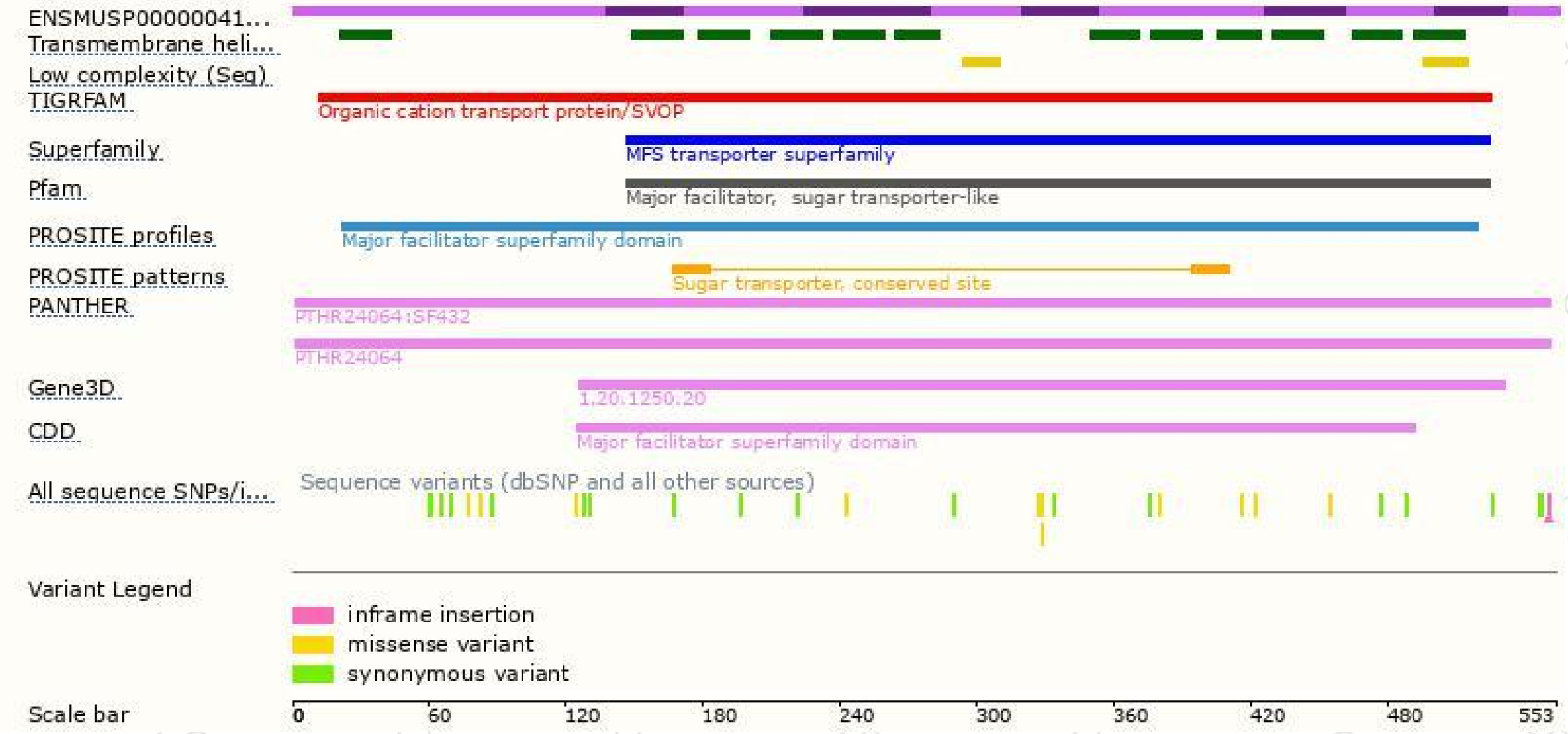
The strategy is based on the design of *Slc22a2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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