

Slc35e2 Cas9-CKO Strategy

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Project Overview

Project Name

Slc35e2

Project type

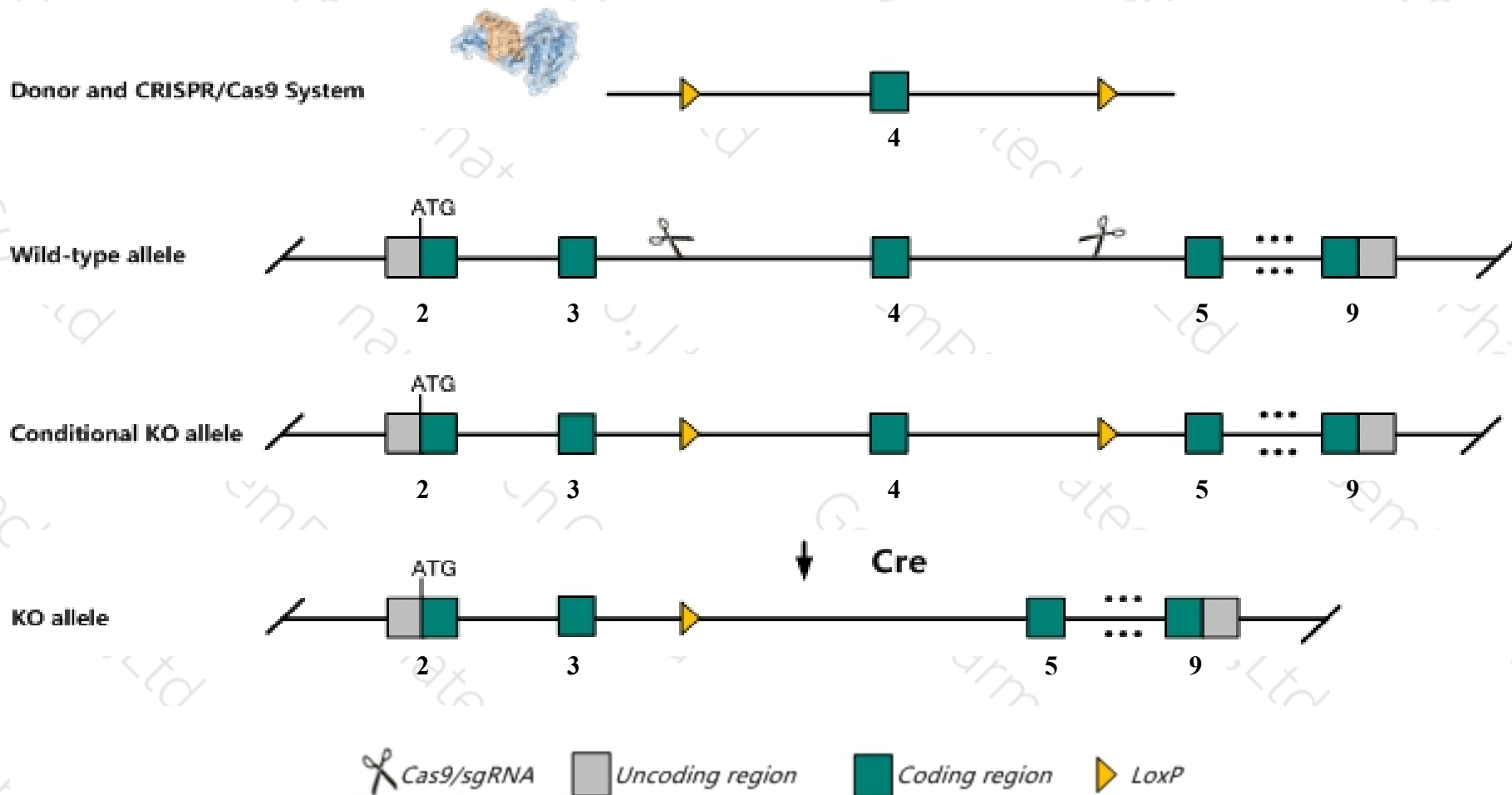
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc35e2* gene. The schematic diagram is as follows:



Technical routes

- The *Slc35e2* gene has 4 transcripts. According to the structure of *Slc35e2* gene, exon4 of *Slc35e2*-202(ENSMUST00000105608.8) transcript is recommended as the knockout region. The region contains 128bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc35e2* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 *Slc35e2* 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.
- The flox region is in the intron of the Gm16023 gene, which may affect the regulation of this gene.
- 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)

Slc35e2 solute carrier family 35, member E2 [Mus musculus (house mouse)]

Gene ID: 320541, updated on 13-Mar-2020

Summary



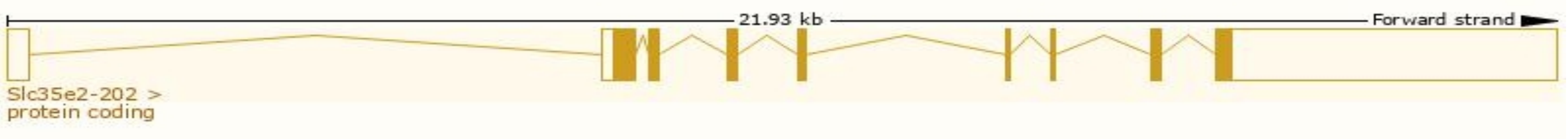
Official Symbol	Slc35e2 provided by MGI
Official Full Name	solute carrier family 35, member E2 provided by MGI
Primary source	MGI:MGI:2444240
See related	Ensembl:ENSMUSG00000042202
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A530082C11Rik, AI957035, Slc35e2a
Expression	Ubiquitous expression in genital fat pad adult (RPKM 6.1), adrenal adult (RPKM 5.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

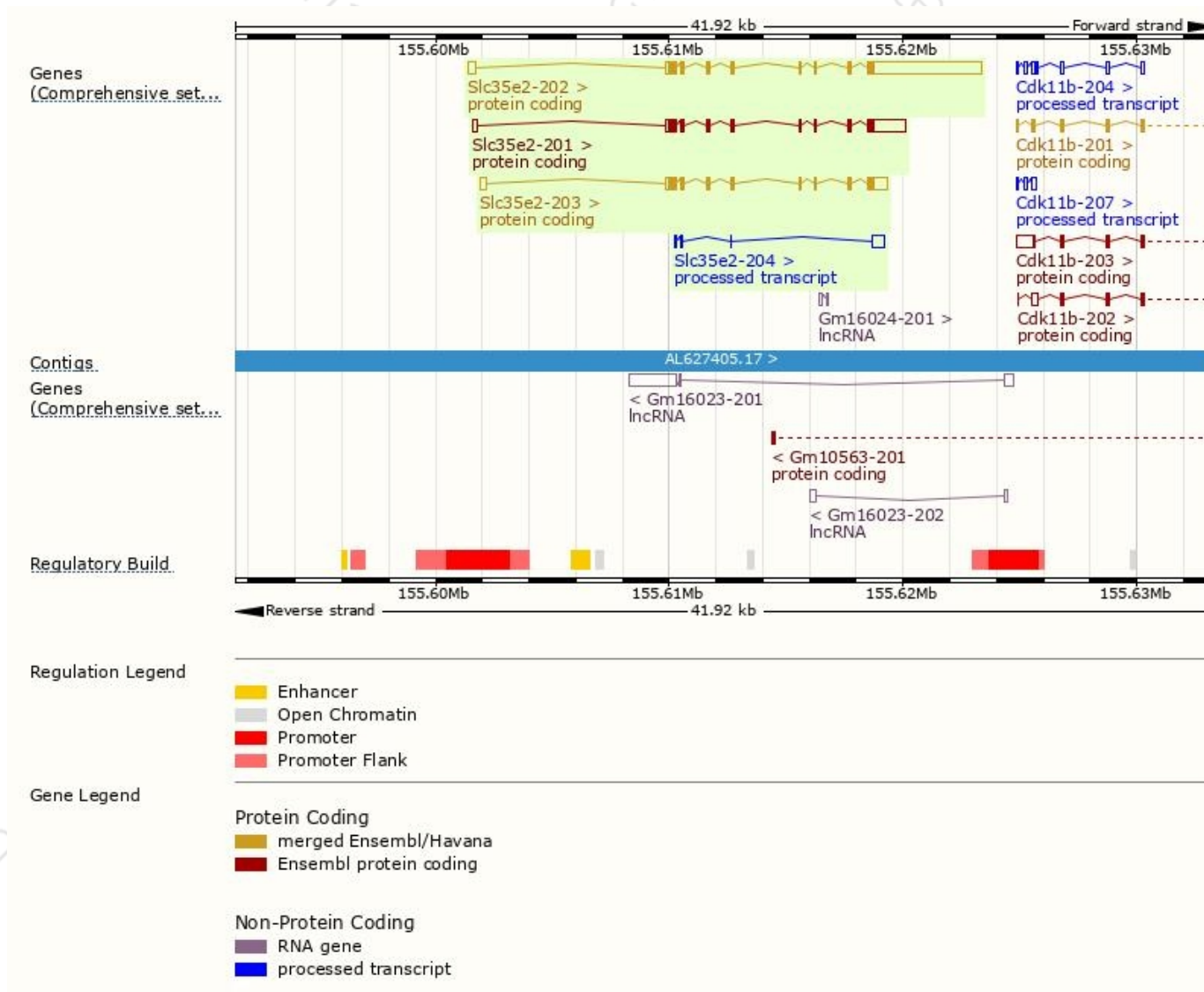
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc35e2-202	ENSMUST00000105608.8	6291	405aa	Protein coding	CCDS38995	Q8C811	TSL:5 GENCODE basic APPRIS P1
Slc35e2-201	ENSMUST00000043829.10	2910	405aa	Protein coding	CCDS38995	Q8C811	TSL:1 GENCODE basic APPRIS P1
Slc35e2-203	ENSMUST00000118607.1	2166	405aa	Protein coding	CCDS38995	Q8C811	TSL:1 GENCODE basic APPRIS P1
Slc35e2-204	ENSMUST00000151425.1	654	No protein	Processed transcript	-	-	TSL:5

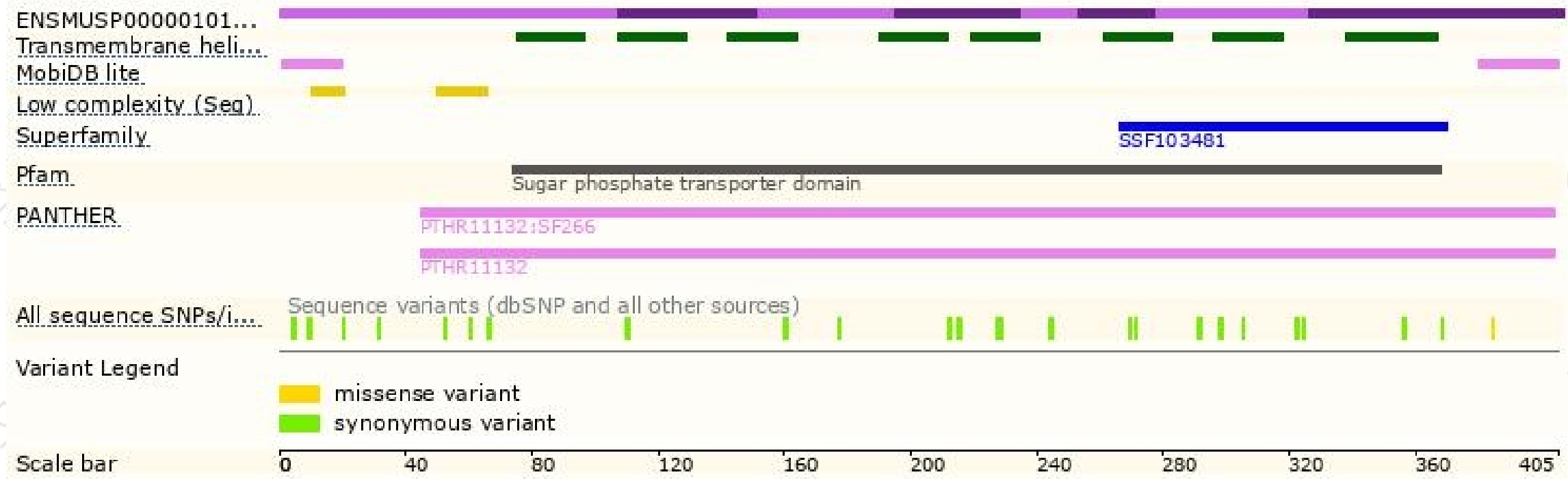
The strategy is based on the design of *Slc35e2-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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