Slc25a34 Cas9-CKO Strategy

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Project Overview

Project Name	***Slc25a34***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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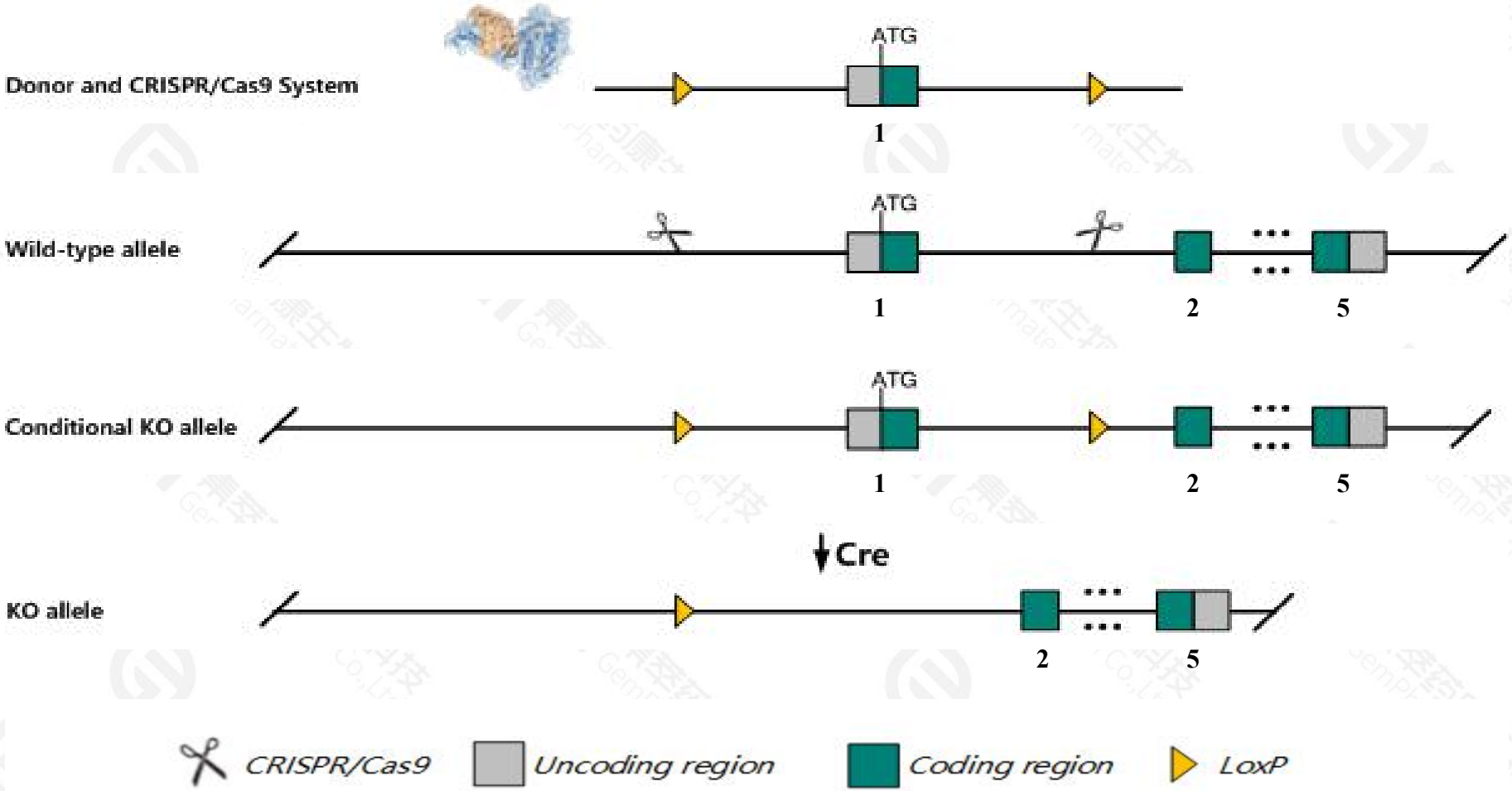
This model will use CRISPR/Cas9 technology to edit the *Slc25a34* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc25a34* gene has 1 transcript. According to the structure of *Slc25a34* gene, exon1 of *Slc25a34-201*(ENSMUST00000038661.8) transcript is recommended as the knockout region.The region contains start codon ATG.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc25a34* 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.

Notice

➢ The N-terminal of *Slc25a34* gene is about ~1.8kb away from the C-terminal of *Plekhm2* gene, this strategy may influence the regulatory function of the N-terminal of *Slc25a34* gene.

➢ The *Slc25a34* 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.

➢ 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）

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Slc25a34 solute carrier family 25, member 34 [Mus musculus (house mouse)]

Gene ID: 384071, updated on 17-Dec-2020

Summary

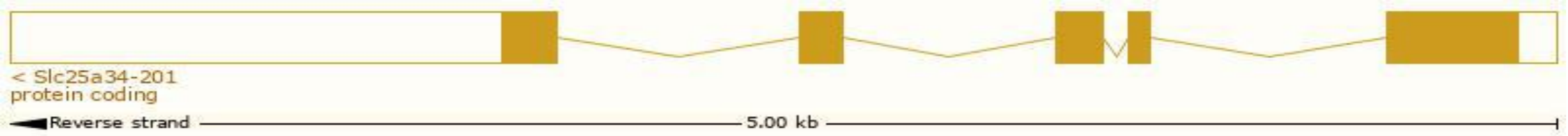
Official Symbol	Slc25a34 provided by MGI
Official Full Name	solute carrier family 25, member 34 provided byMGI
Primary source	MGI:MGI:2686215
See related	Ensembl:ENSMUSG00000040740
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm1369
Expression	Biased expression in heart adult (RPKM 69.7), colon adult (RPKM 20.1) and 5 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

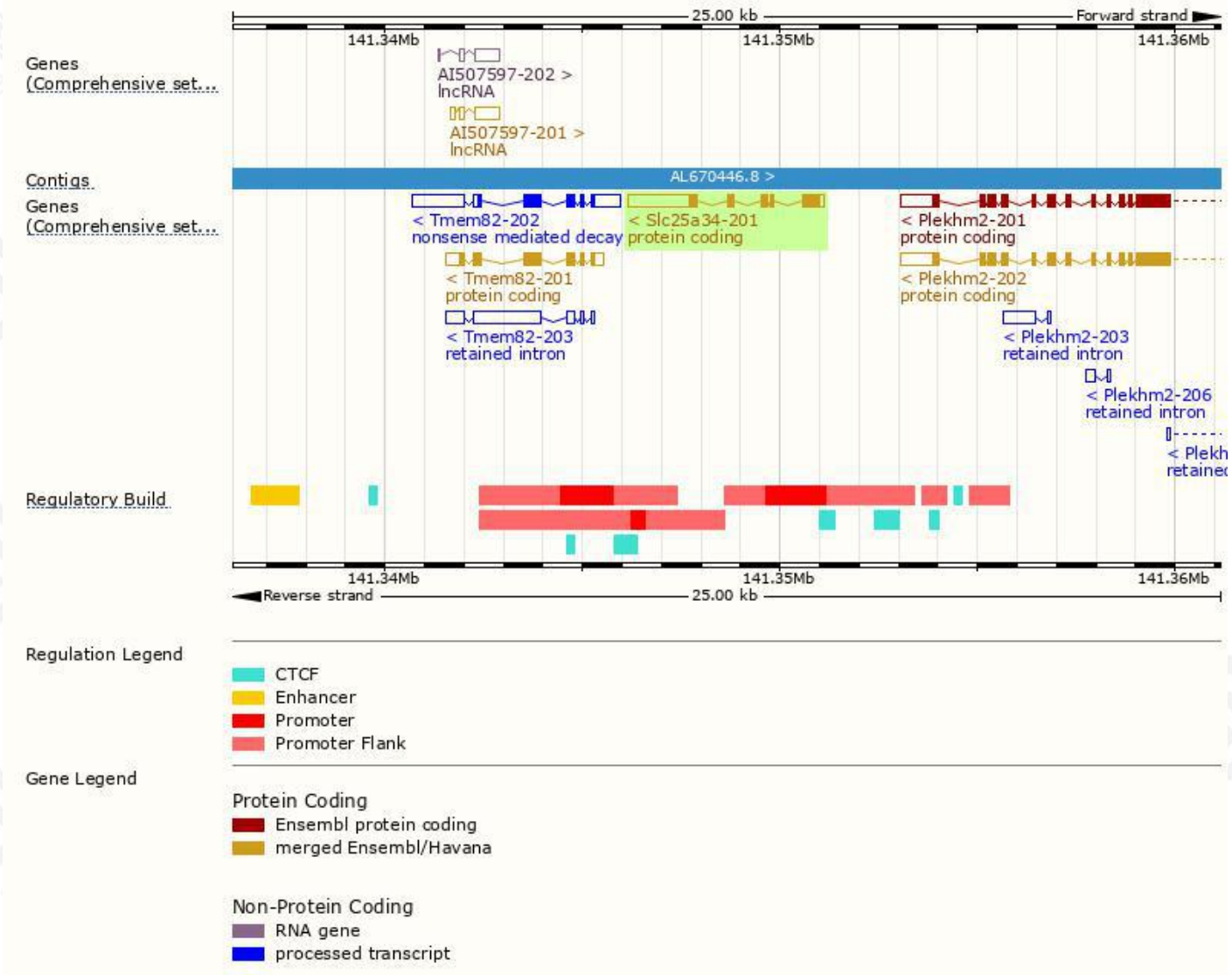
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a34-201	ENSMUST00000038661.8	2670	318aa	Protein coding	CCDS18878		TSL:1 , GENCODE basic , APPRIS P1 ,

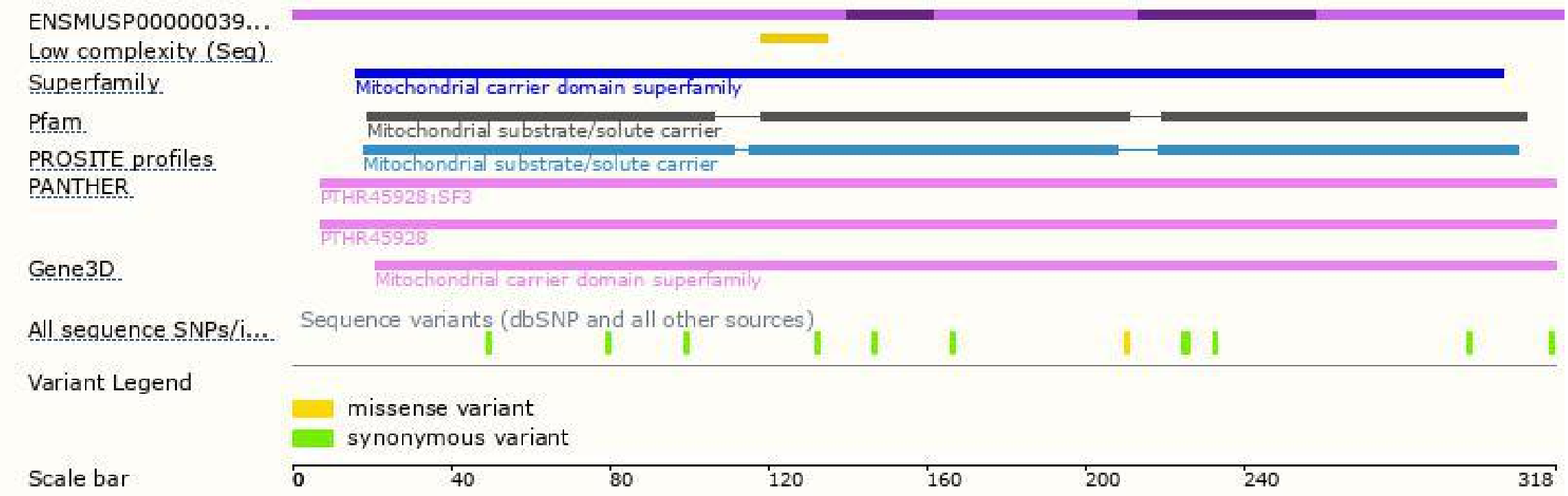
The strategy is based on the design of *Slc25a34-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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