Slc25a38 Cas9-CKO Strategy

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Project Overview

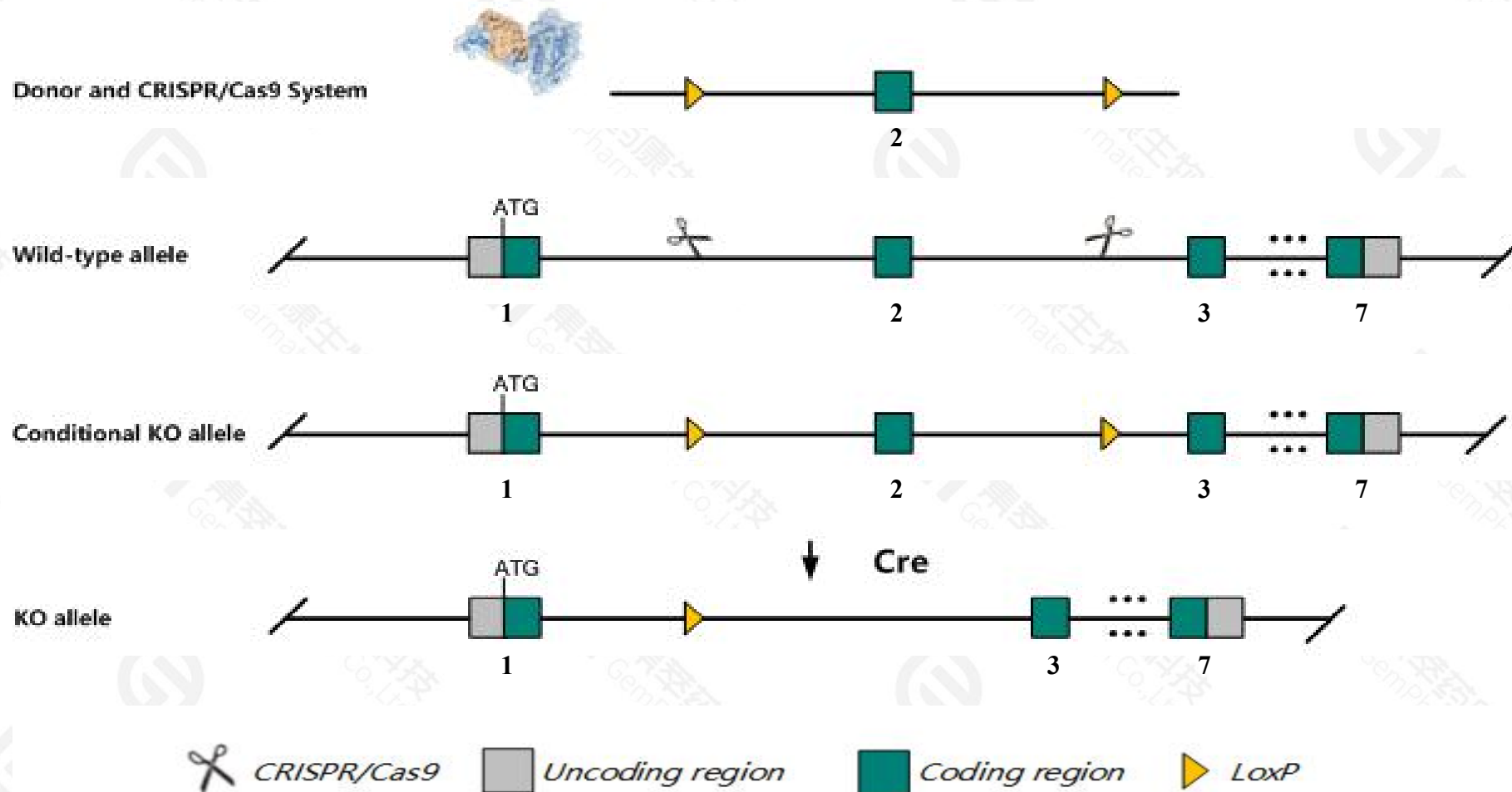|	
Project Name	***Slc25a38***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a38* gene. The schematic diagram is as follows:

Technical routes

➤ The *Slc25a38* gene has 7 transcripts. According to the structure of *Slc25a38* gene, exon2 of *Slc25a38-201*(ENSMUST00000035106.12) transcript is recommended as the knockout region.The region contains 122bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Slc25a38* 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 *Slc25a38* gene is located on the Chr9. 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）

Slc25a38 solute carrier family 25, member 38 [Mus musculus (house mouse)]

Gene ID: 208638, updated on 17-Dec-2020

▲ Summary

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Official Symbol	Slc25a38 provided by MGI
Official Full Name	solute carrier family 25, member 38 provided by MGI
Primary source	MGI:MGI:2384782
See related	Ensembl:ENSMUSG00000032519
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	AV019094, BC010801, a, appoptosin
Expression	Ubiquitous expression in liver E14.5 (RPKM 24.0), liver E14 (RPKM 21.7) and 28 other tissuesSee 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
Slc25a38-201	ENSMUST00000035106.12	1791	326aa	Protein coding	CCDS23622		TSL:1 , GENCODE basic , APPRIS P1 ,
Slc25a38-202	ENSMUST00000135514.2	991	243aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Slc25a38-205	ENSMUST00000144768.8	961	195aa	Nonsense mediated decay	-		TSL:5 ,
Slc25a38-206	ENSMUST00000150093.8	682	138aa	Nonsense mediated decay	-		TSL:5 ,
Slc25a38-203	ENSMUST00000137522.8	673	No protein	Processed transcript	-		TSL:3 ,
Slc25a38-207	ENSMUST00000154969.2	492	No protein	Processed transcript	-		TSL:3 ,
Slc25a38-204	ENSMUST00000139079.8	420	No protein	Processed transcript	-		TSL:1 ,

The strategy is based on the design of *Slc25a38-201* transcript,the transcription is shown below:
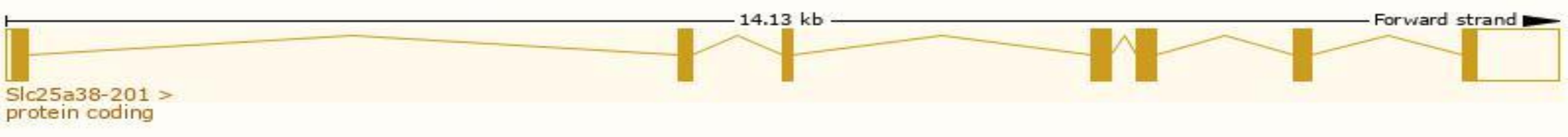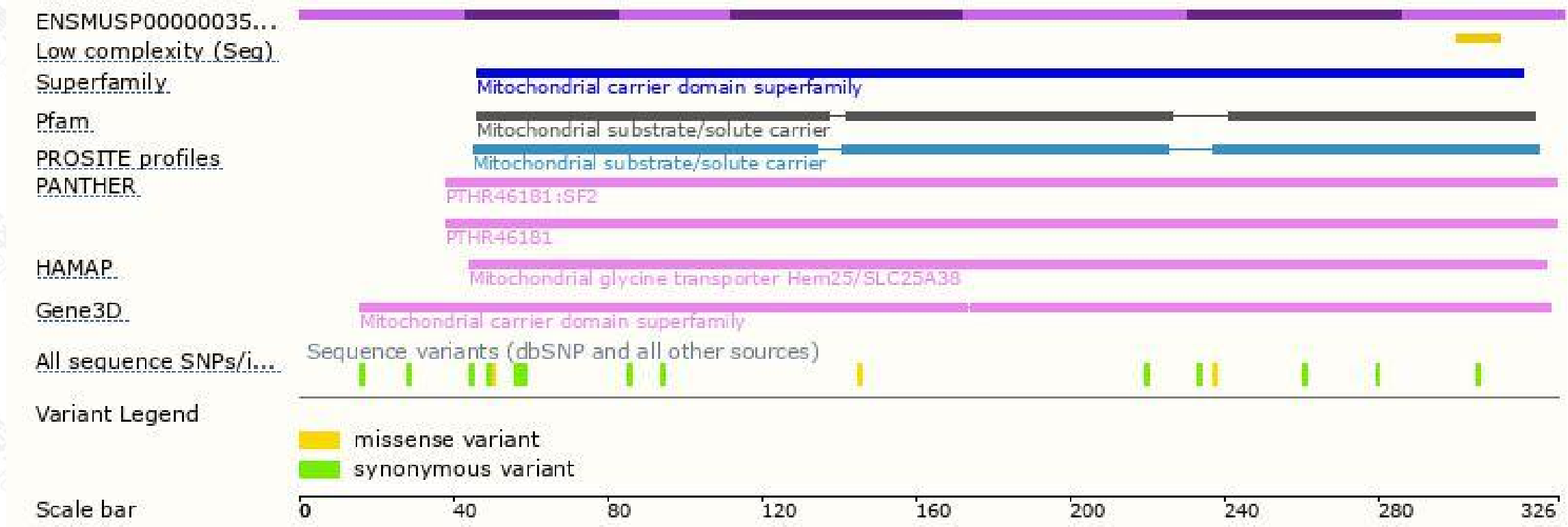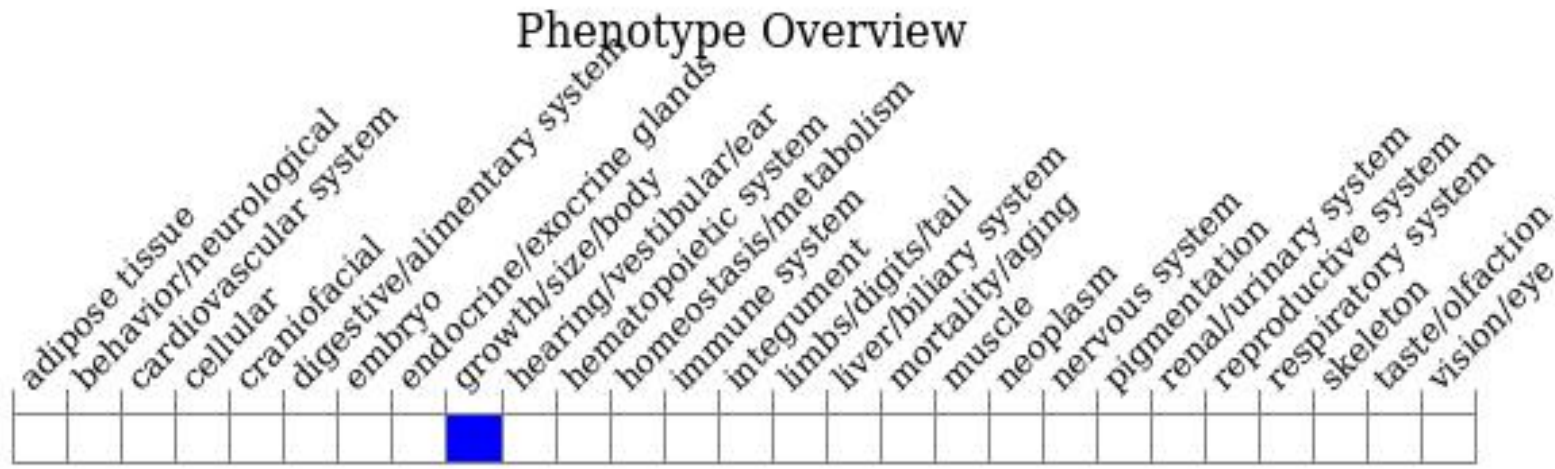
Genomic location distribution
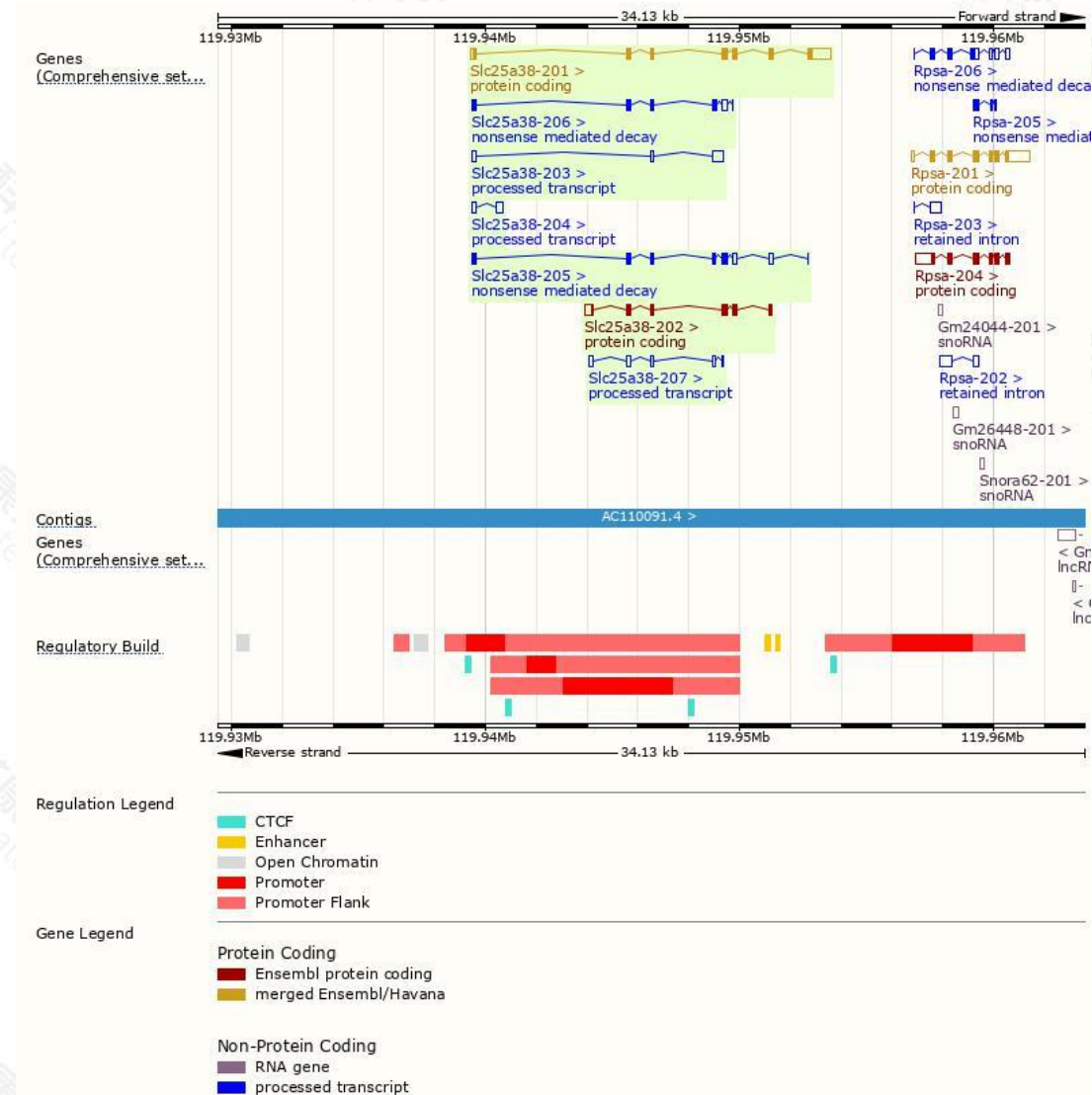
Protein domain

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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