

Slc25a26 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Slc25a26

Project type

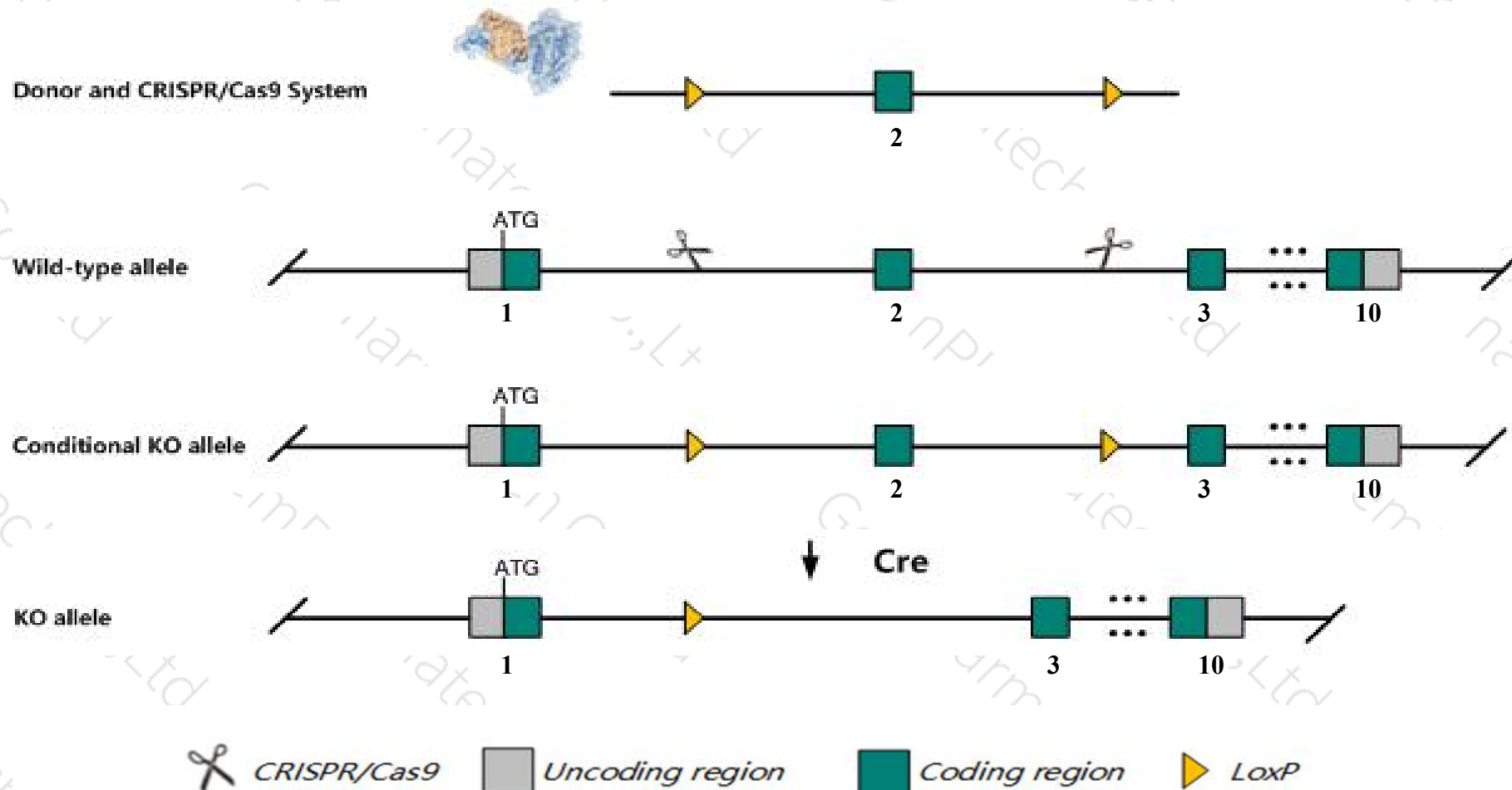
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a26* gene. The schematic diagram is as follows:



- The *Slc25a26* gene has 7 transcripts. According to the structure of *Slc25a26* gene, exon2 of *Slc25a26-201* (ENSMUST00000061118.10) transcript is recommended as the knockout region. The region contains 157bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc25a26* 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.

- According to the existing MGI data, Embryos homozygous for a transposon insertion appear growth retarded and underdeveloped and die after E8.5 but prior to birth.
- The *Slc25a26* gene is located on the Chr6. 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)

Slc25a26 solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 26 [Mus musculus (house mouse)]

Gene ID: 67582, updated on 31-Jan-2019

Summary



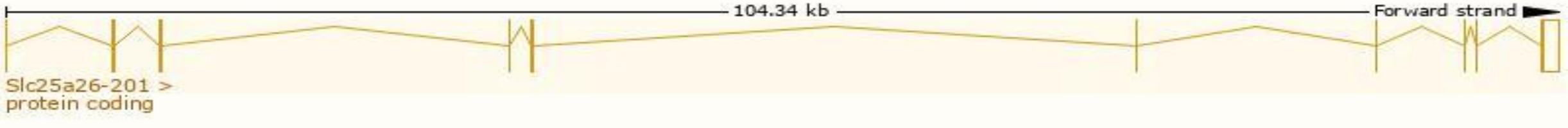
Official Symbol	Slc25a26 provided by MGI
Official Full Name	solute carrier family 25 (mitochondrial carrier, phosphate carrier), member 26 provided by MGI
Primary source	MGI:MGI:1914832
See related	Ensembl:ENSMUSG00000045100
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930433D19Rik, 4933433F13Rik, AW557176, D6Bwg0781e, Slc25a6
Expression	Ubiquitous expression in testis adult (RPKM 4.5), heart adult (RPKM 4.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

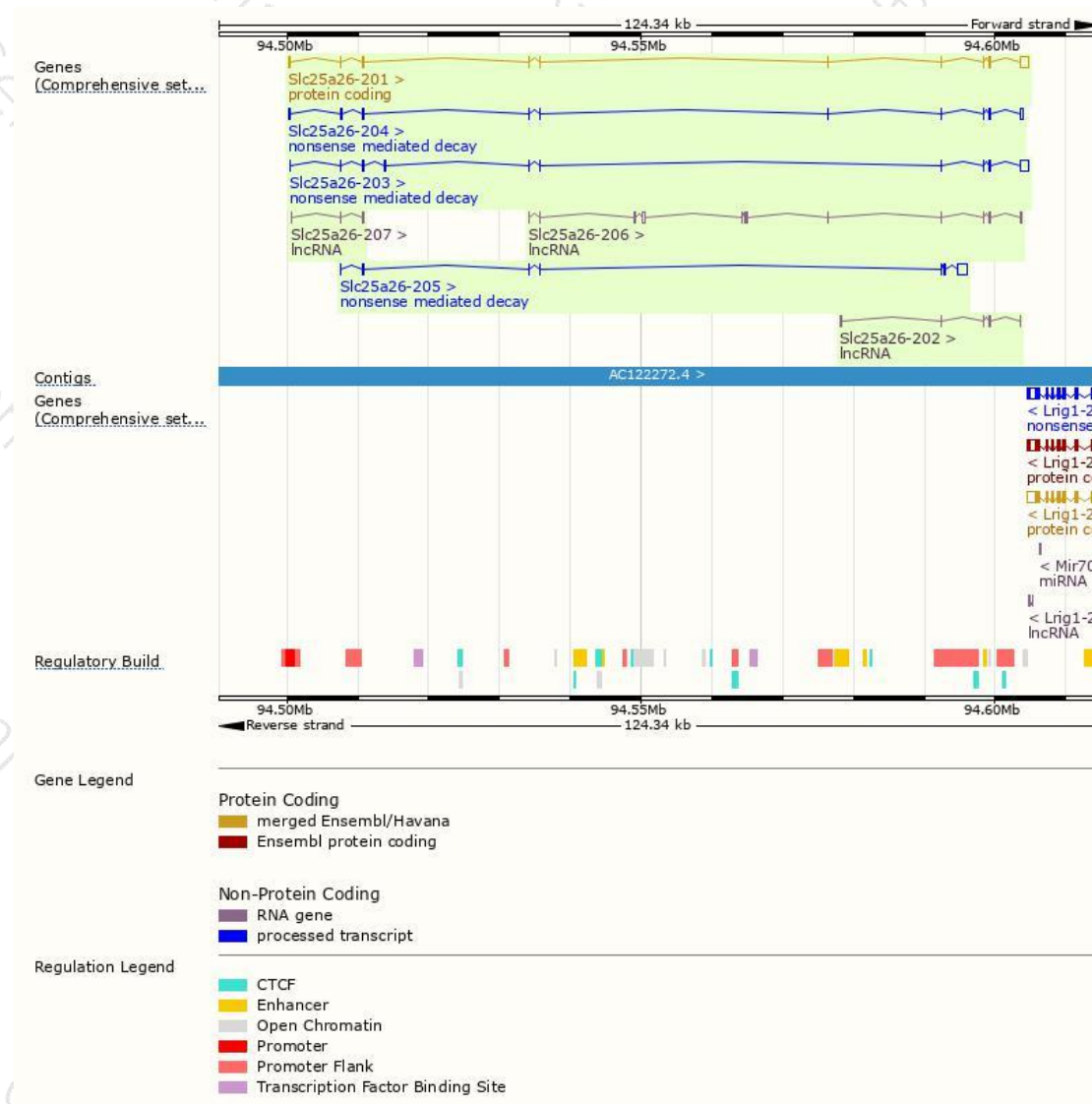
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a26-201	ENSMUST00000061118.10	1922	274aa	Protein coding	CCDS20379	Q5U680	TSL:1 GENCODE basic APPRIS P1
Slc25a26-203	ENSMUST00000204235.2	2076	121aa	Nonsense mediated decay	-	A0A0N4SW11	TSL:1
Slc25a26-205	ENSMUST00000204985.1	2048	155aa	Nonsense mediated decay	-	A0A0N4SVB1	CDS 5' incomplete TSL:1
Slc25a26-204	ENSMUST00000204764.2	1339	83aa	Nonsense mediated decay	-	A0A0N4SUT5	TSL:1
Slc25a26-206	ENSMUST00000205173.2	1453	No protein	lncRNA	-	-	TSL:5
Slc25a26-202	ENSMUST00000203484.1	381	No protein	lncRNA	-	-	TSL:3
Slc25a26-207	ENSMUST00000205254.1	376	No protein	lncRNA	-	-	TSL:3

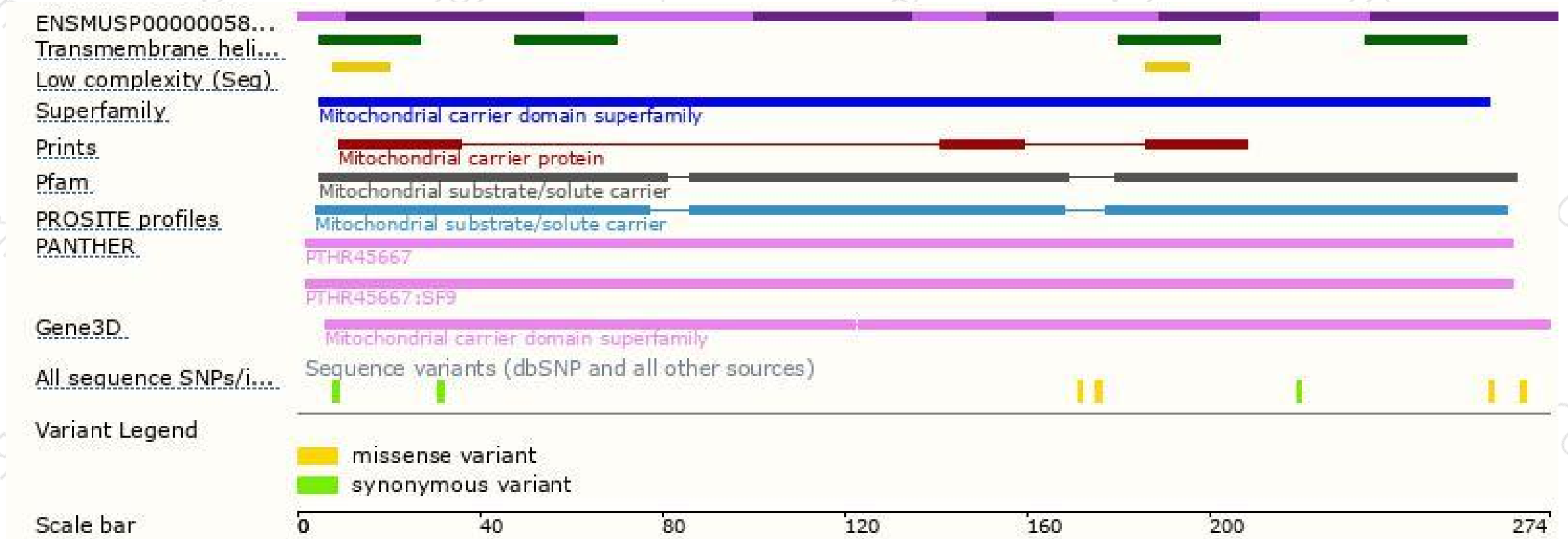
The strategy is based on the design of *Slc25a26-201* transcript,The transcription is shown below



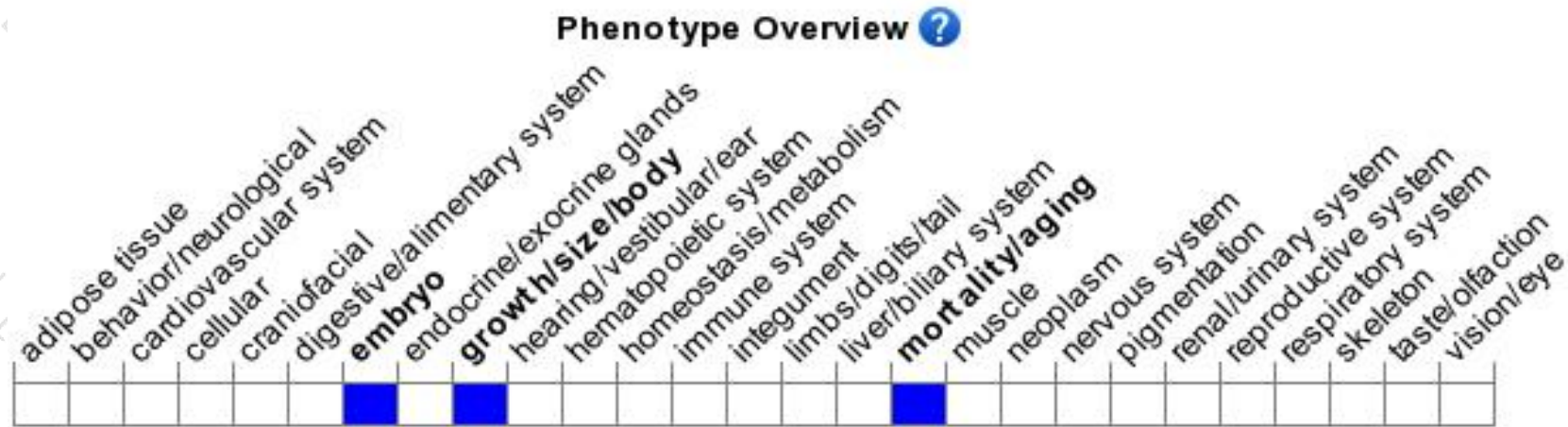
Genomic location distribution



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/>).

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

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