Slc38a6 Cas9-CKO Strategy

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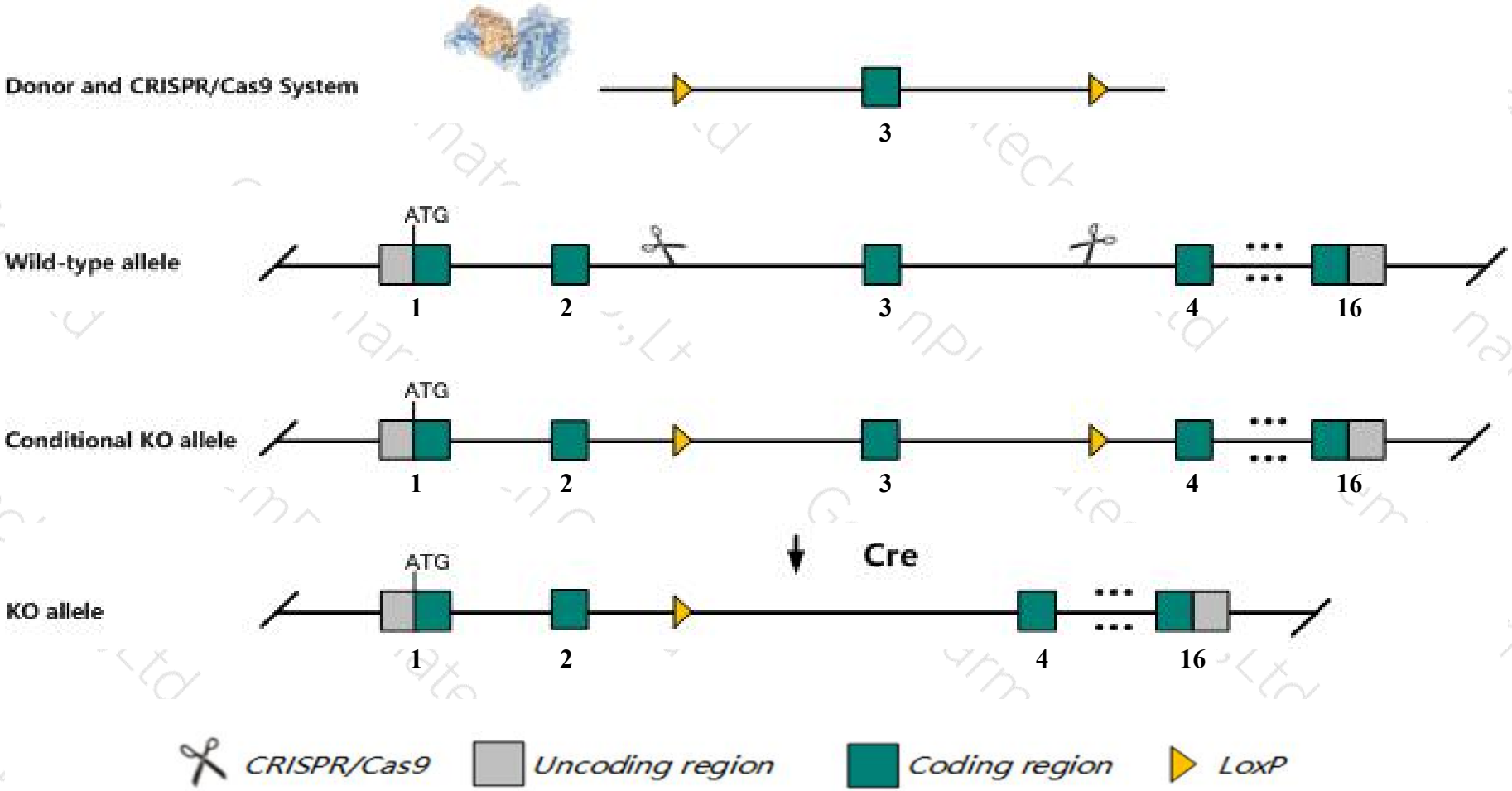
Project Overview

Project Name	***Slc38a6***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc38a6* gene. The schematic diagram is as follows:



Technical routes

- The *Slc38a6* gene has 8 transcripts. According to the structure of *Slc38a6* gene, exon3 of *Slc38a6-206* (ENSMUST00000140523.7) transcript is recommended as the knockout region.The region contains 74bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Slc38a6* 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 *Slc38a6* gene is located on the Chr12. 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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Slc38a6 solute carrier family 38, member 6 [Mus musculus (house mouse)]

Gene ID: 625098, updated on 2-Apr-2019

Summary

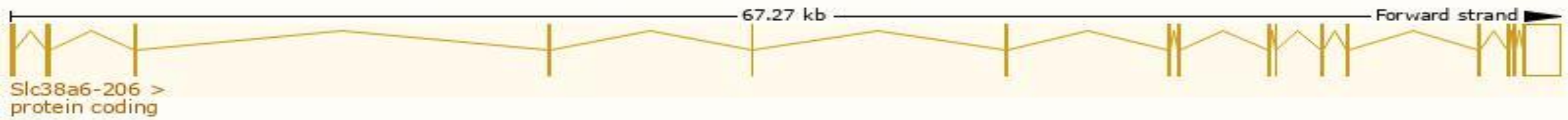
Official Symbol	Slc38a6 provided by MGI
Official Full Name	solute carrier family 38, member 6 provided by MGI
Primary source	MGI:MGI:3648156
See related	Ensembl:ENSMUSG00000044712
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW322671, EG625098
Expression	Ubiquitous expression in limb E14.5 (RPKM 3.8), placenta adult (RPKM 3.4) and 27 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

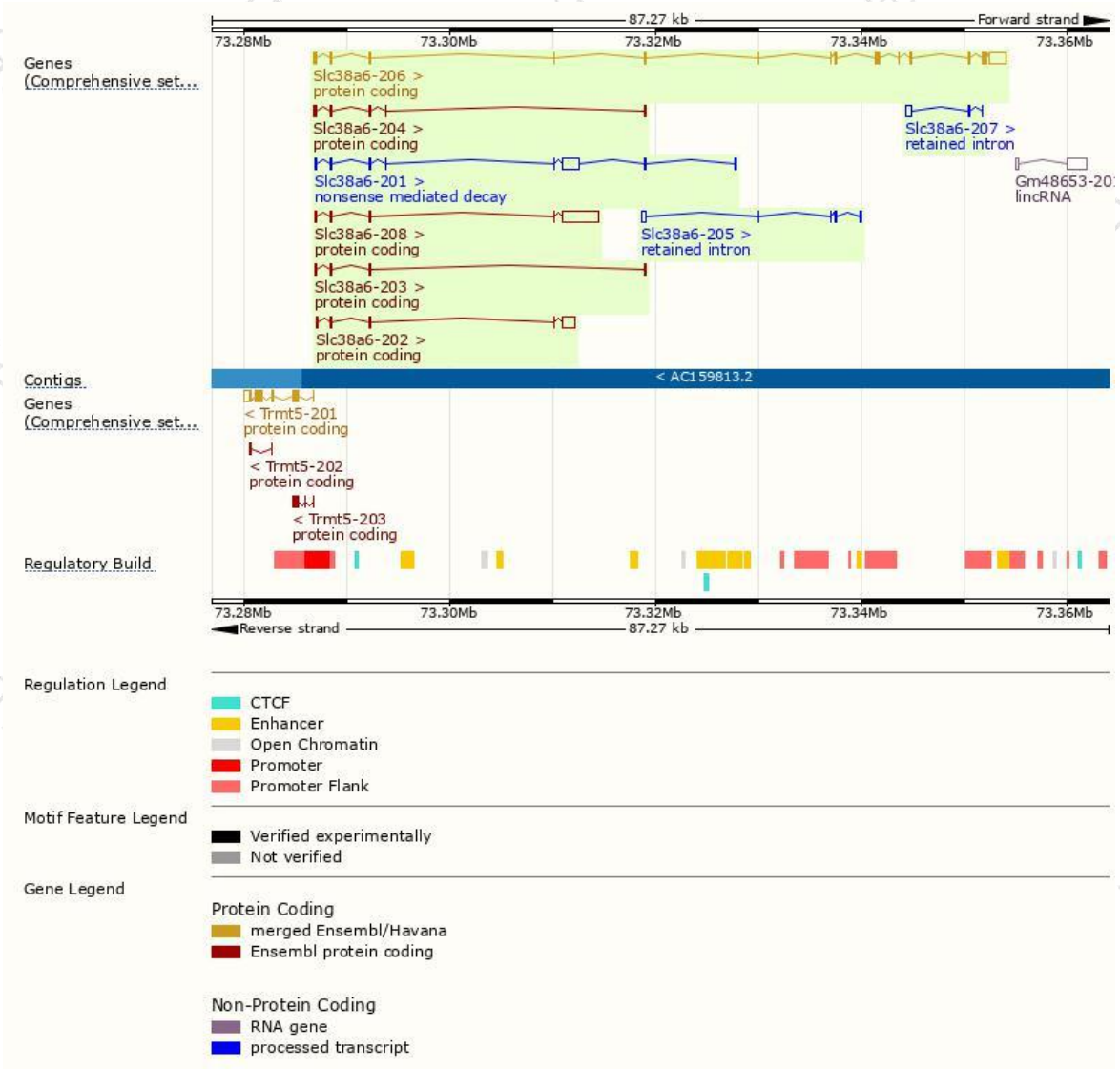
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc38a6-206	ENSMUST00000140523.7	3032	457aa	Protein coding	CCDS49088	G3UVW3	TSL:1 GENCODE basic APPRIS P1
Slc38a6-208	ENSMUST00000153941.7	3927	125aa	Protein coding	-	D3YUW5	TSL:1 GENCODE basic
Slc38a6-202	ENSMUST00000101313.3	1546	70aa	Protein coding	-	F2Z3Y3	TSL:1 GENCODE basic
Slc38a6-204	ENSMUST00000126488.7	589	131aa	Protein coding	-	Q3USV8	TSL:5 GENCODE basic
Slc38a6-203	ENSMUST00000122920.7	359	114aa	Protein coding	-	E0CY99	CDS 3' incomplete TSL:5
Slc38a6-201	ENSMUST00000058139.13	2244	131aa	Nonsense mediated decay	-	Q3USV8	TSL:1
Slc38a6-207	ENSMUST00000150996.1	767	No protein	Retained intron	-	-	TSL:5
Slc38a6-205	ENSMUST00000134247.1	725	No protein	Retained intron	-	-	TSL:3

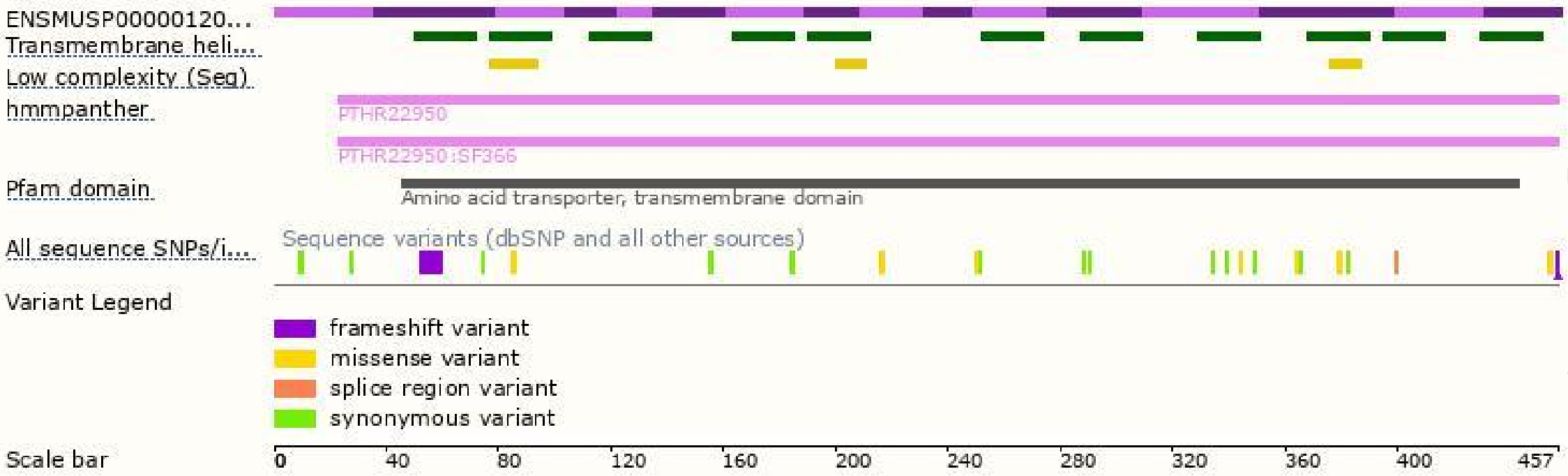
The strategy is based on the design of *Slc38a6-206* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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