Slc66a1 Cas9-KO Strategy

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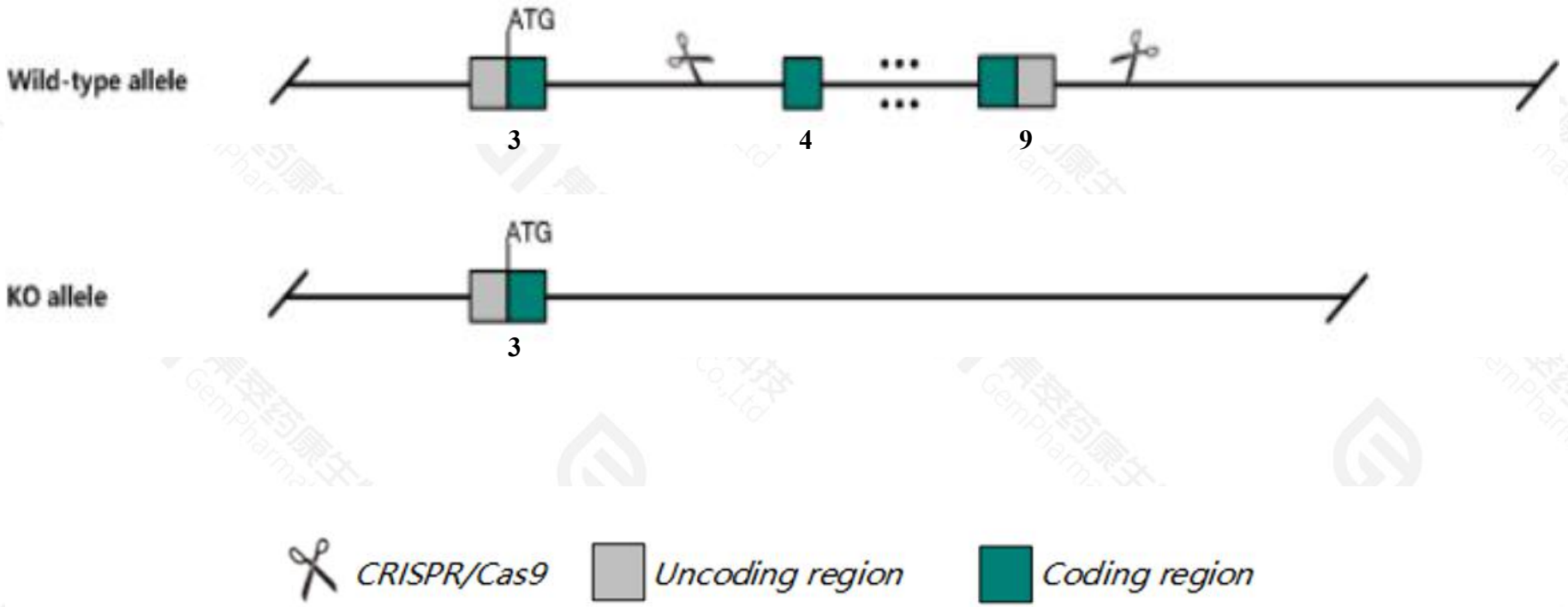
Project Overview

Project Name	***Slc66a1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc66a1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc66a1* gene has 5 transcripts. According to the structure of *Slc66a1* gene, exon4-exon9 of *Slc66a1-201*(ENSMUST00000053862.11) transcript is recommended as the knockout region.The region contains 718bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc66a1* gene. The brief process is as follows: gRNA was transcribed in vitro.Cas9 and gRNA 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.

Notice

➢ The *Slc66a1* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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Pqlc2 PQ loop repeat containing 2 [Mus musculus (house mouse)]

Gene ID: 212555, updated on 13-Mar-2020

Summary

Official Symbol	Pqlc2 provided by MGI
Official Full Name	PQ loop repeat containing 2 provided byMGI
Primary source	MGI:MGI:2384837
See related	Ensembl:ENSMUSG00000028744
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	BC019216, Slc66a1
Expression	Ubiquitous expression in spleen adult (RPKM 7.2), kidney adult (RPKM 7.0) and 28 other tissuesSee more
Orthologs	human all

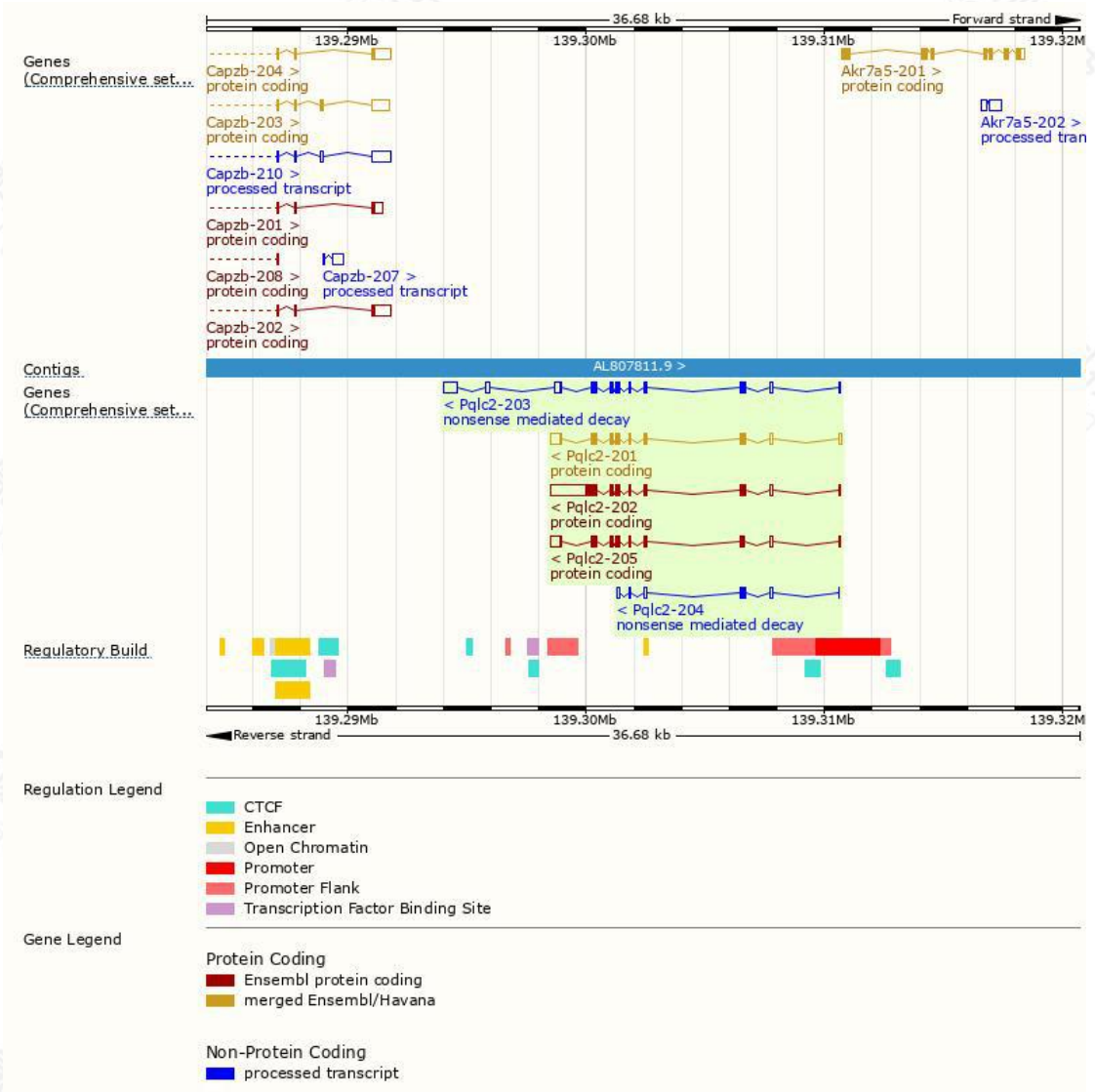
Transcript information（Ensembl）

The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pqlc2-201	ENSMUST00000053862.11	1532	293aa	Protein coding	CCDS18843	Q8C4N4	TSL:1 GENCODE basic APPRIS P2
Pqlc2-205	ENSMUST00000172747.7	1405	293aa	Protein coding	CCDS18843	Q8C4N4	TSL:5 GENCODE basic APPRIS P2
Pqlc2-202	ENSMUST00000105801.8	2756	350aa	Protein coding	-	A6PWV7	TSL:2 GENCODE basic APPRIS ALT2
Pqlc2-203	ENSMUST00000139840.8	2115	293aa	Nonsense mediated decay	-	Q8C4N4	TSL:1
Pqlc2-204	ENSMUST00000141007.1	684	55aa	Nonsense mediated decay	-	F6QNQ2	TSL:5

The strategy is based on the design of *Slc66a1-201* 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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