

Slc66a2 Cas9-CKO Strategy

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Project Overview

Project Name

Slc66a2

Project type

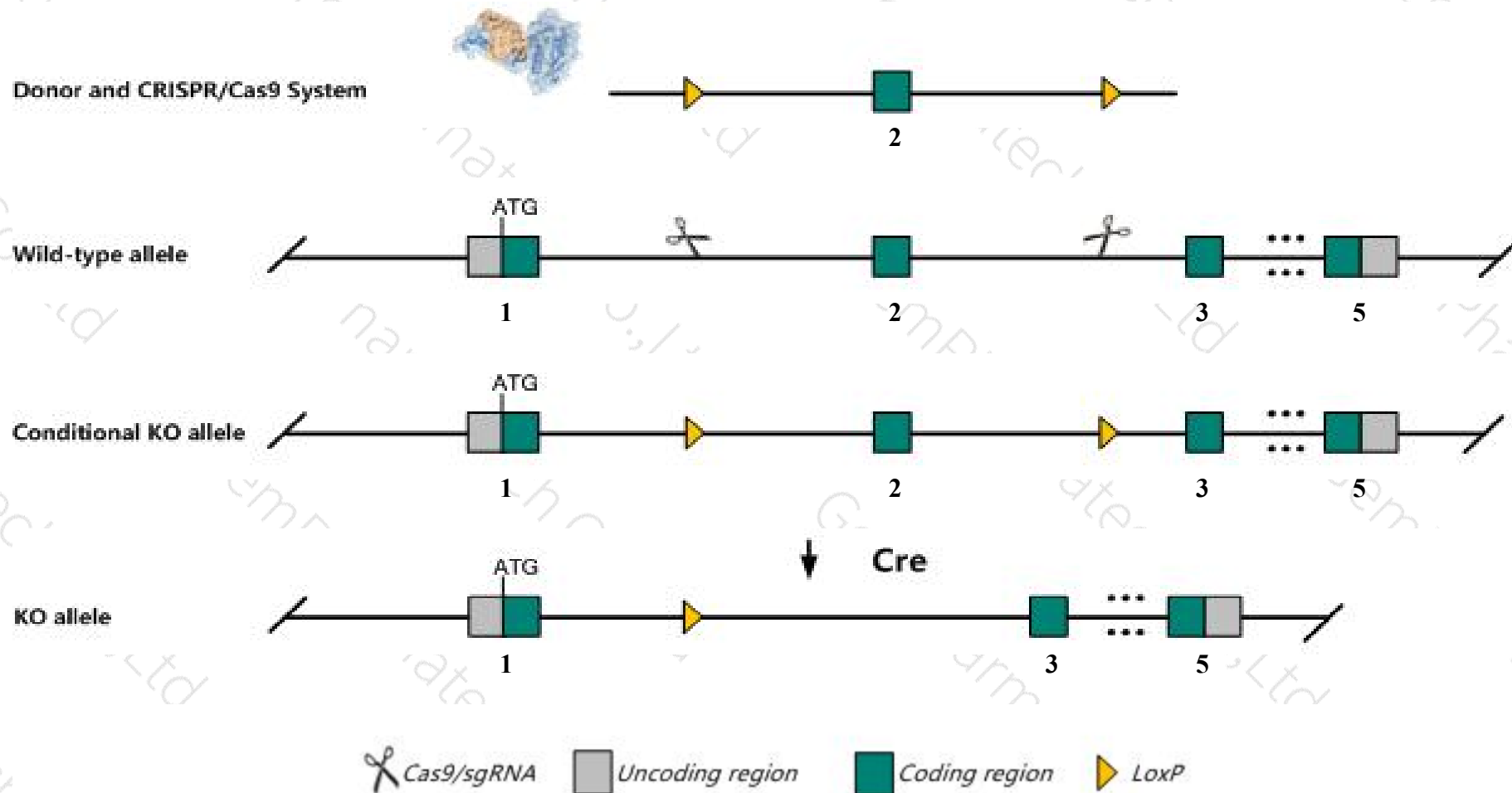
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc66a2* gene. The schematic diagram is as follows:



Technical routes

- The *Slc66a2* gene has 11 transcripts. According to the structure of *Slc66a2* gene, exon2 of *Pqlc1-207*(ENSMUST00000140594.7) transcript is recommended as the knockout region. The region contains 134bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc66a2* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Slc66a2* gene is located on the Chr18. 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)

Slc66a2 solute carrier family 66 member 2 [Mus musculus (house mouse)]

Gene ID: 66943, updated on 13-Mar-2020

Summary



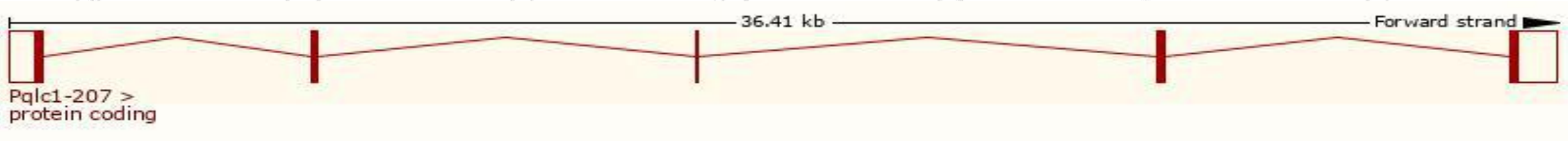
Official Symbol	Slc66a2 provided by MGI
Official Full Name	solute carrier family 66 member 2 provided by MGI
Primary source	MGI:MGI:1914193
See related	Ensembl:ENSMUSG00000034006
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310009N05Rik, 4933425L21Rik, 5730564E11Rik, C78974, Pqlc1
Expression	Ubiquitous expression in liver adult (RPKM 24.7), stomach adult (RPKM 23.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

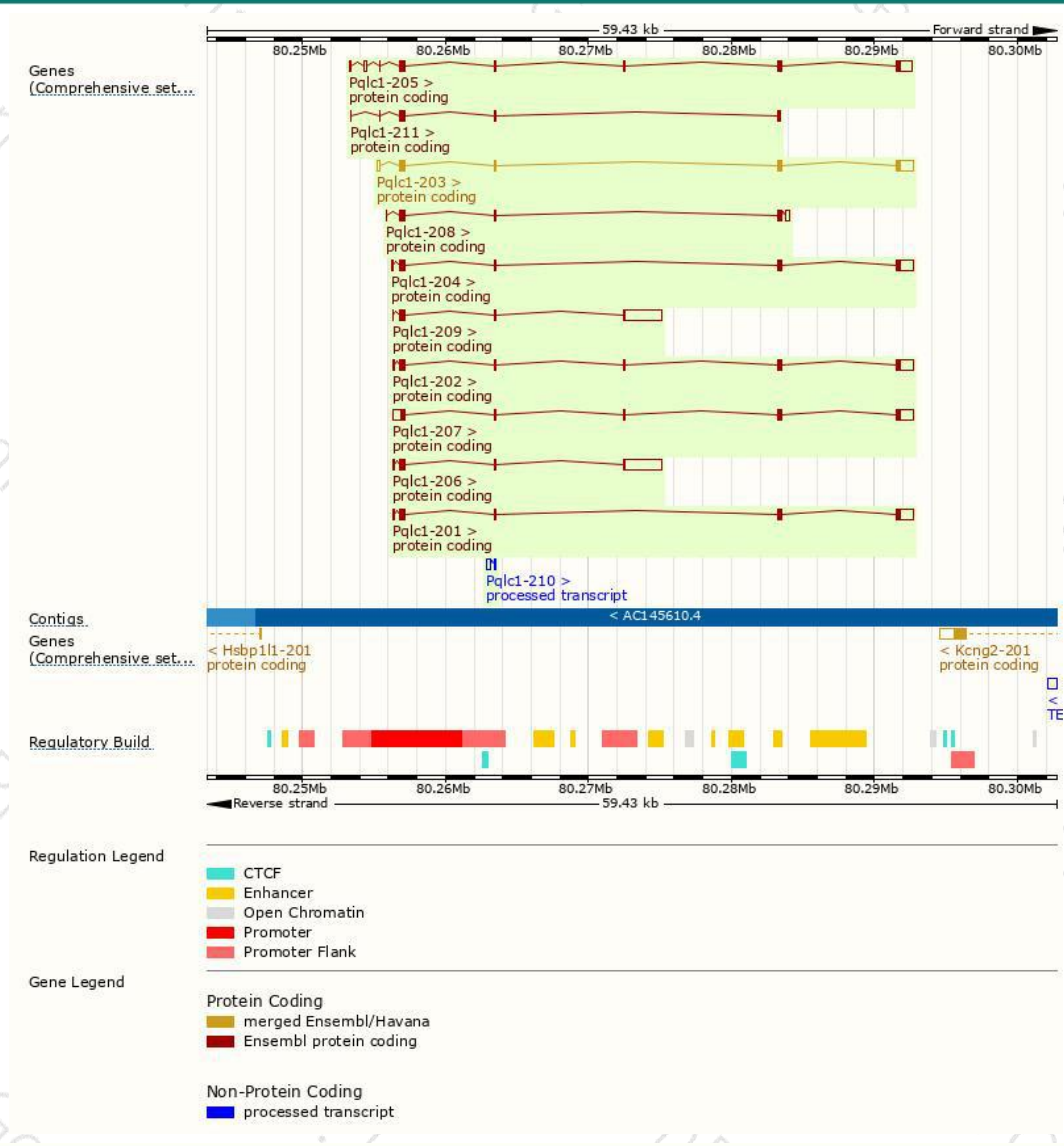
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pqlc1-207	ENSMUST00000140594.7	2356	271aa	Protein coding	CCDS29367	Q80XM9	TSL:1 GENCODE basic APPRIS P3
Pqlc1-205	ENSMUST00000131780.7	2080	271aa	Protein coding	CCDS29367	Q80XM9	TSL:1 GENCODE basic APPRIS P3
Pqlc1-203	ENSMUST00000123750.7	2004	253aa	Protein coding	CCDS50334	Q80XM9	TSL:1 GENCODE basic APPRIS ALT1
Pqlc1-202	ENSMUST00000091798.9	1989	271aa	Protein coding	CCDS29367	Q80XM9	TSL:5 GENCODE basic APPRIS P3
Pqlc1-201	ENSMUST00000070135.7	1911	253aa	Protein coding	CCDS50334	Q80XM9	TSL:1 GENCODE basic APPRIS ALT1
Pqlc1-204	ENSMUST00000129043.7	1864	253aa	Protein coding	CCDS50334	Q80XM9	TSL:1 GENCODE basic APPRIS ALT1
Pqlc1-206	ENSMUST00000134545.2	3258	134aa	Protein coding	-	Q80XM9	TSL:1 GENCODE basic
Pqlc1-209	ENSMUST00000151677.8	3192	134aa	Protein coding	-	Q80XM9	TSL:1 GENCODE basic
Pqlc1-208	ENSMUST00000144468.7	1050	209aa	Protein coding	-	D3Z2D5	TSL:1 GENCODE basic
Pqlc1-211	ENSMUST00000157056.7	672	149aa	Protein coding	-	D3YYH5	CDS 3' incomplete TSL:3
Pqlc1-210	ENSMUST00000155039.1	380	No protein	Processed transcript	-	-	TSL:3

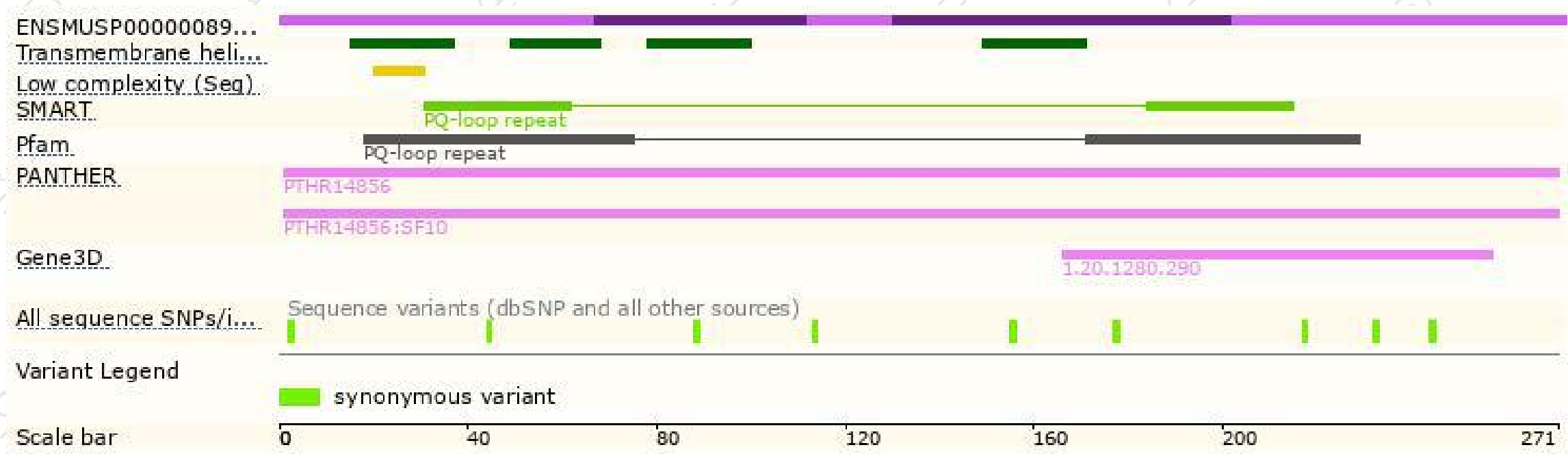
The strategy is based on the design of *Pqlc1-207* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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