Slc39a8 Cas9-KO Strategy

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Project Overview

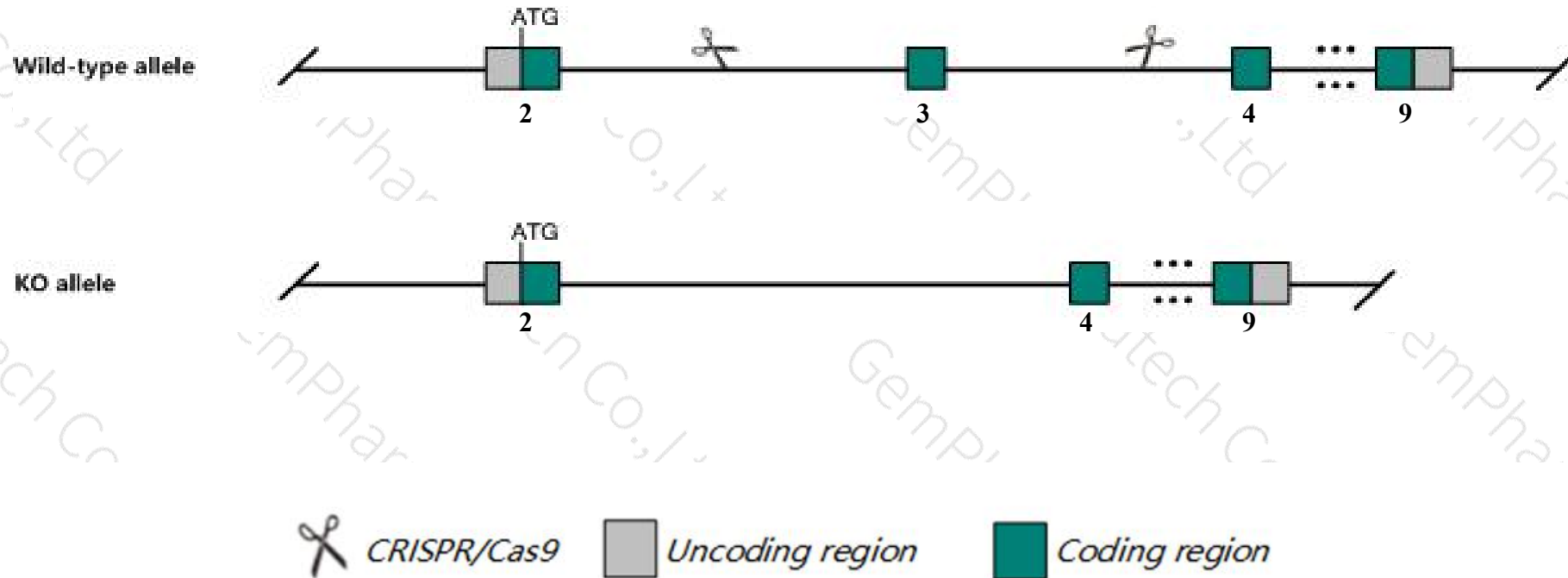|	
Project Name	*Slc39a8*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc39a8* gene. The schematic diagram is as follows:

Technical routes

➢ The *Slc39a8* gene has 6 transcripts. According to the structure of *Slc39a8* gene, exon3 of *Slc39a8-205* (ENSMUST00000167390.7) transcript is recommended as the knockout region.The region contains 163bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc39a8* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➤ Transcript *Slc39a8*-203 may not be affected.

➤ The knockout region is near to the N-terminal of *4933401H06Rik* gene,this strategy may influence the regulatory function of the N-terminal of *4933401H06Rik* gene.

➤ The *Slc39a8* gene is located on the Chr3. 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）

Slc39a8   solute carrier family 39 (metal ion transporter), member 8 [*Mus musculus* (house mouse)]

Gene ID: 67547, updated on 2-Nov-2019

▲ Summary

Official Symbol	Slc39a8 provided by MGI
Official Full Name	solute carrier family 39 (metal ion transporter), member 8 provided by MGI
Primary source	MGI:MGI:1914797
See related	Ensembl:ENSMUSG00000053897
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	Zip8; ZIP-8; BIGM103; AA986696; 4933419D20Rik
Expression	Biased expression in lung adult (RPKM 38.3), placenta adult (RPKM 18.0) and 12 other tissues See more
Orthologs	human all

▲ Genomic context

Location: 3 G3; 3 63.04 cM

See Slc39a8 in Genome Data Viewer

Exon count: 12

| Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (135816882..135888572)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (135488455..135551536)

Transcript information（Ensembl）

The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc39a8-205	ENSMUST00000167390.7	3533	462aa	Protein coding	CCDS17859	Q91W10	TSL:5 GENCODE basic APPRIS P1
Slc39a8-206	ENSMUST00000180196.7	3383	462aa	Protein coding	CCDS17859	Q91W10	TSL:5 GENCODE basic APPRIS P1
Slc39a8-202	ENSMUST00000081978.9	3314	462aa	Protein coding	CCDS17859	Q91W10	TSL:1 GENCODE basic APPRIS P1
Slc39a8-201	ENSMUST00000029810.5	3203	462aa	Protein coding	CCDS17859	Q91W10	TSL:1 GENCODE basic APPRIS P1
Slc39a8-203	ENSMUST00000133810.1	4212	No protein	Retained intron	-	-	TSL:2
Slc39a8-204	ENSMUST00000139953.1	2762	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Slc39a8-205* transcript,The transcription is shown below

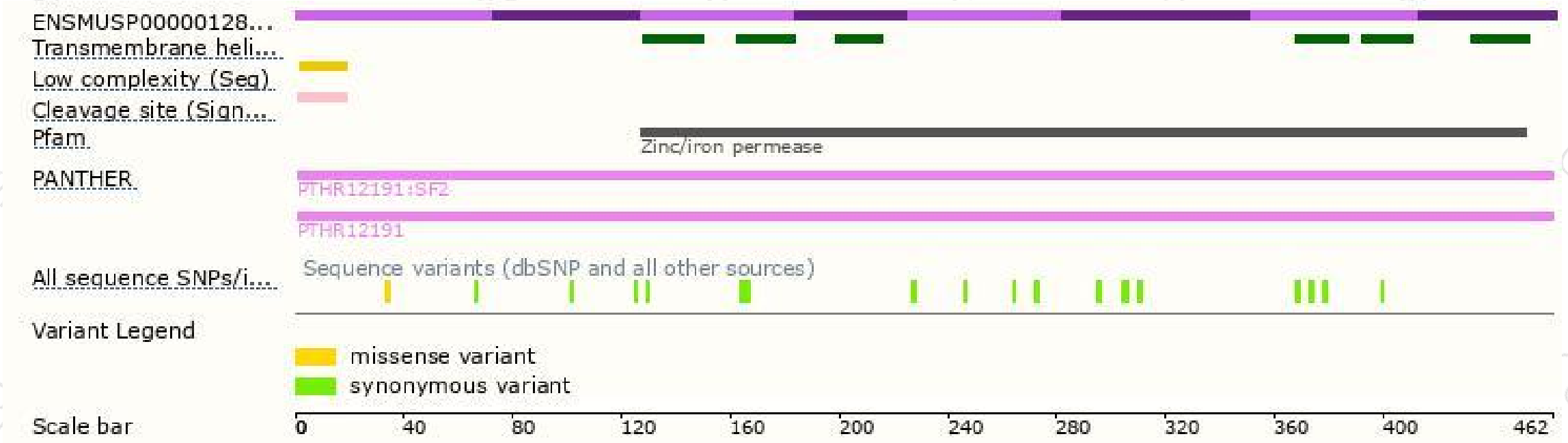62.78 kb — Forward strand
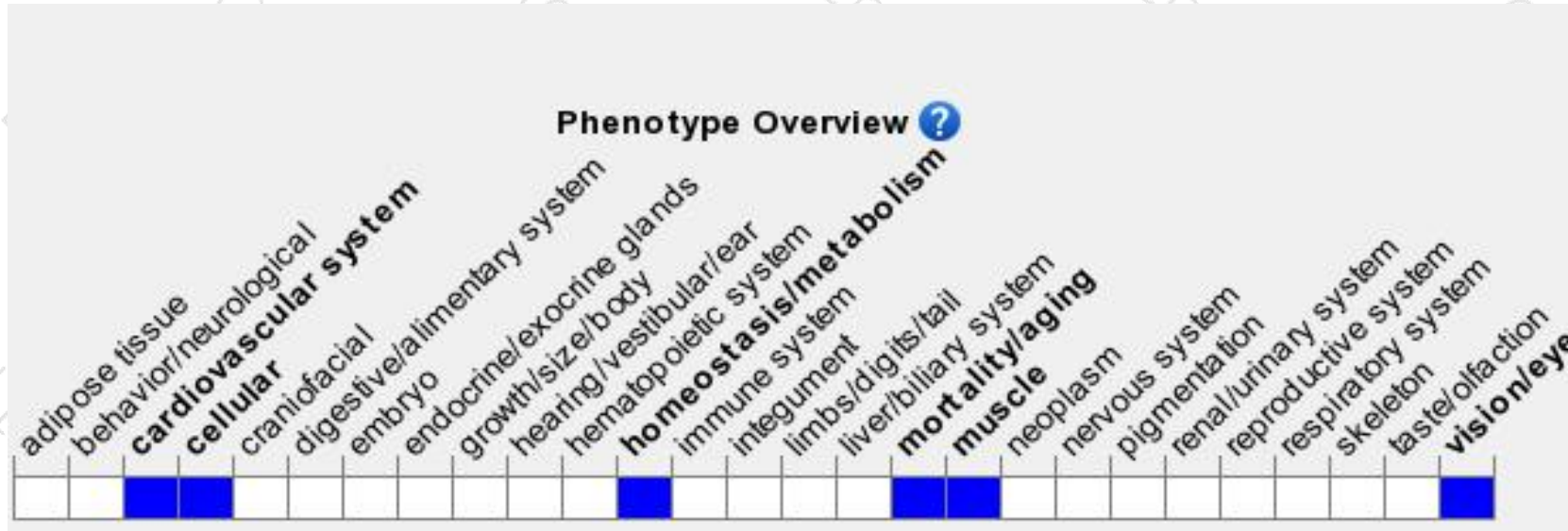
Slc39a8-205 >
protein coding
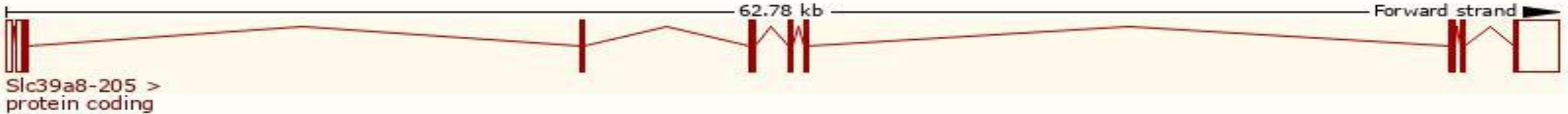
Genomic location distribution
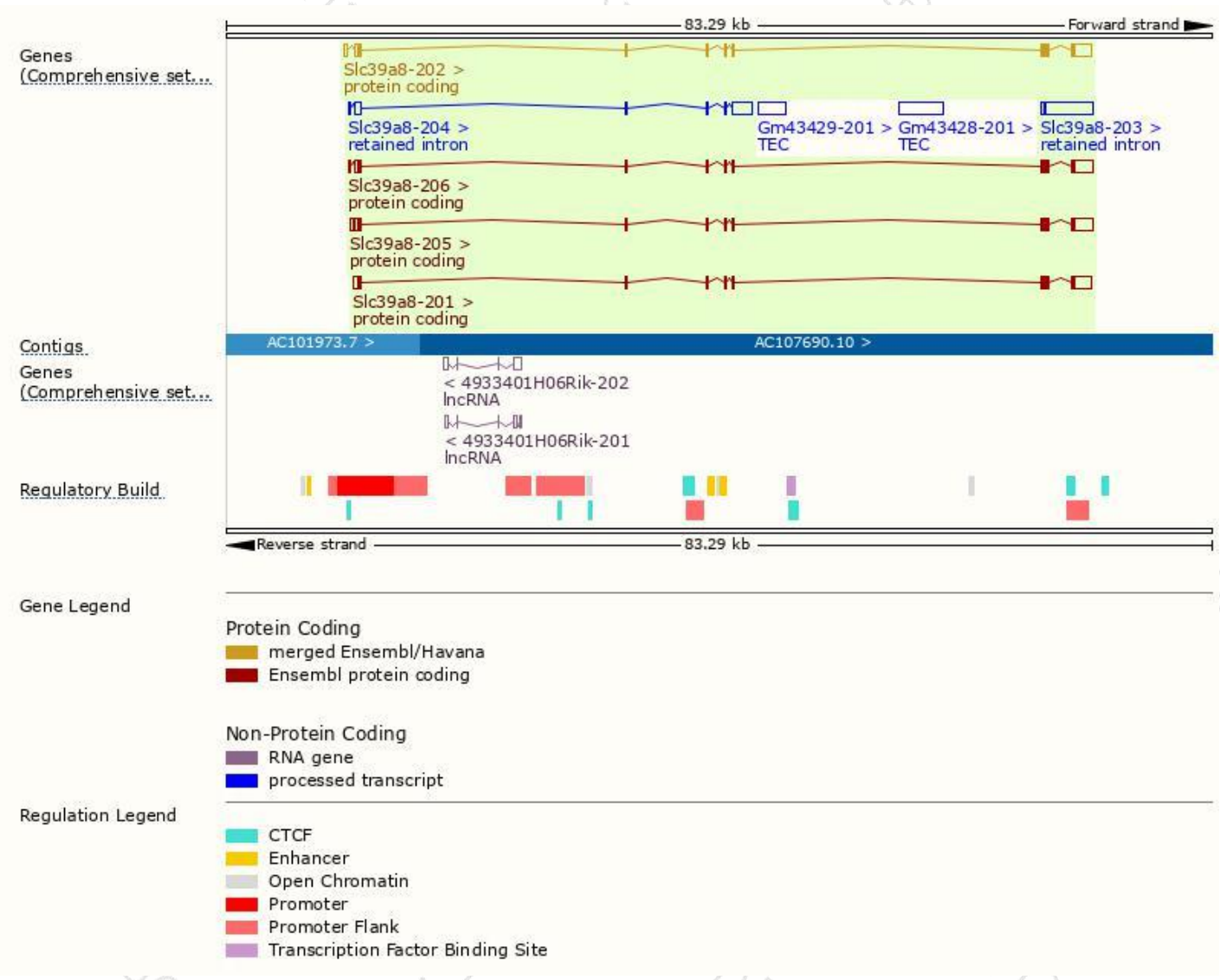
Protein domain

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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