

Slc39a13 Cas9-KO Strategy

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Project Overview

Project Name

Slc39a13

Project type

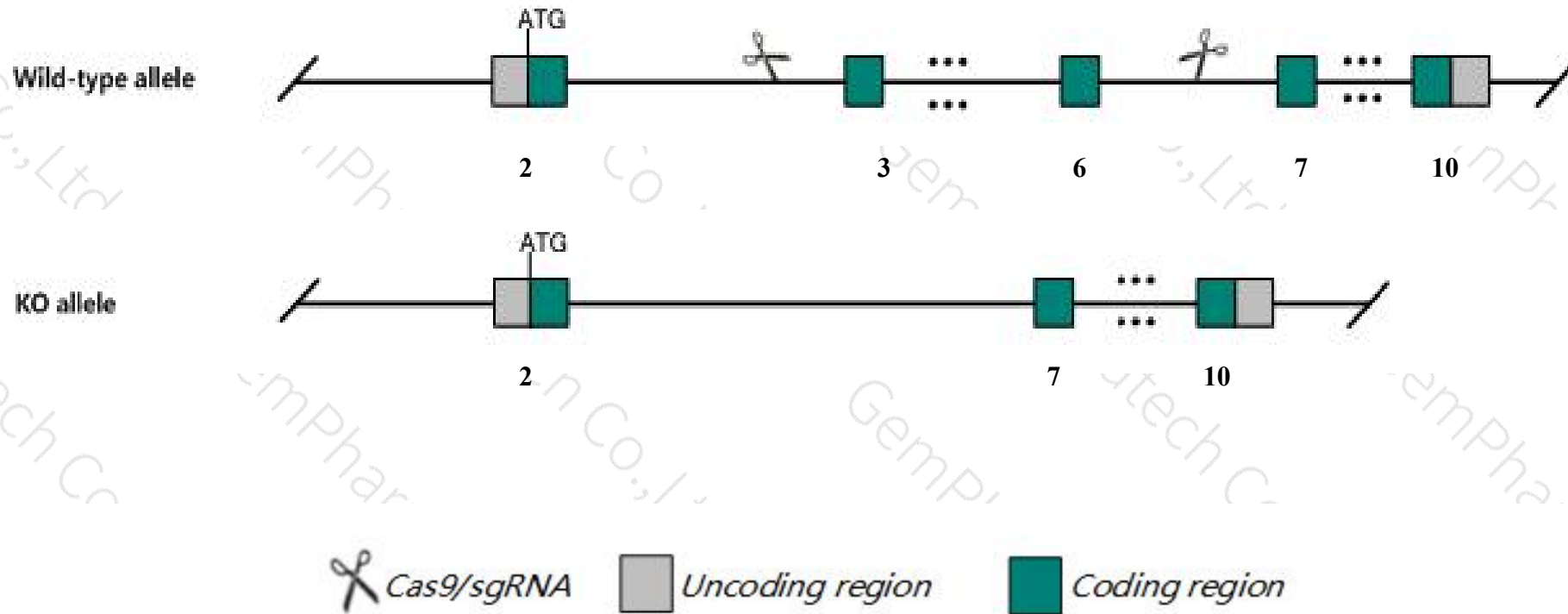
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc39a13* gene. The schematic diagram is as follows:



- The *Slc39a13* gene has 11 transcripts. According to the structure of *Slc39a13* gene, exon3-exon6 of *Slc39a13-203* (ENSMUST00000111436.2) transcript is recommended as the knockout region. The region contains 464bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc39a13* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- According to the existing MGI data, Mice homozygous for disruption of this gene display skeletal abnormalities and dental abnormalities.
- The *Slc39a13* gene is located on the Chr2. 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

Gene information (NCBI)

Slc39a13 solute carrier family 39 (metal ion transporter), member 13 [Mus musculus (house mouse)]

Gene ID: 68427, updated on 31-Jan-2019

Summary



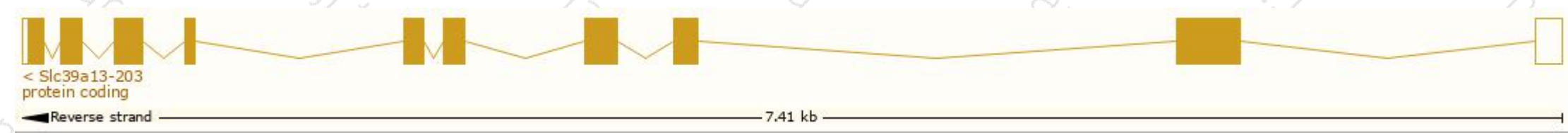
Official Symbol	Slc39a13 provided by MGI
Official Full Name	solute carrier family 39 (metal ion transporter), member 13 provided by MGI
Primary source	MGI:MGI:1915677
See related	Ensembl:ENSMUSG00000002105
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1100001L14Rik, AA387663, ZIP-13, ZIP13
Expression	Ubiquitous expression in limb E14.5 (RPKM 17.2), lung adult (RPKM 14.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

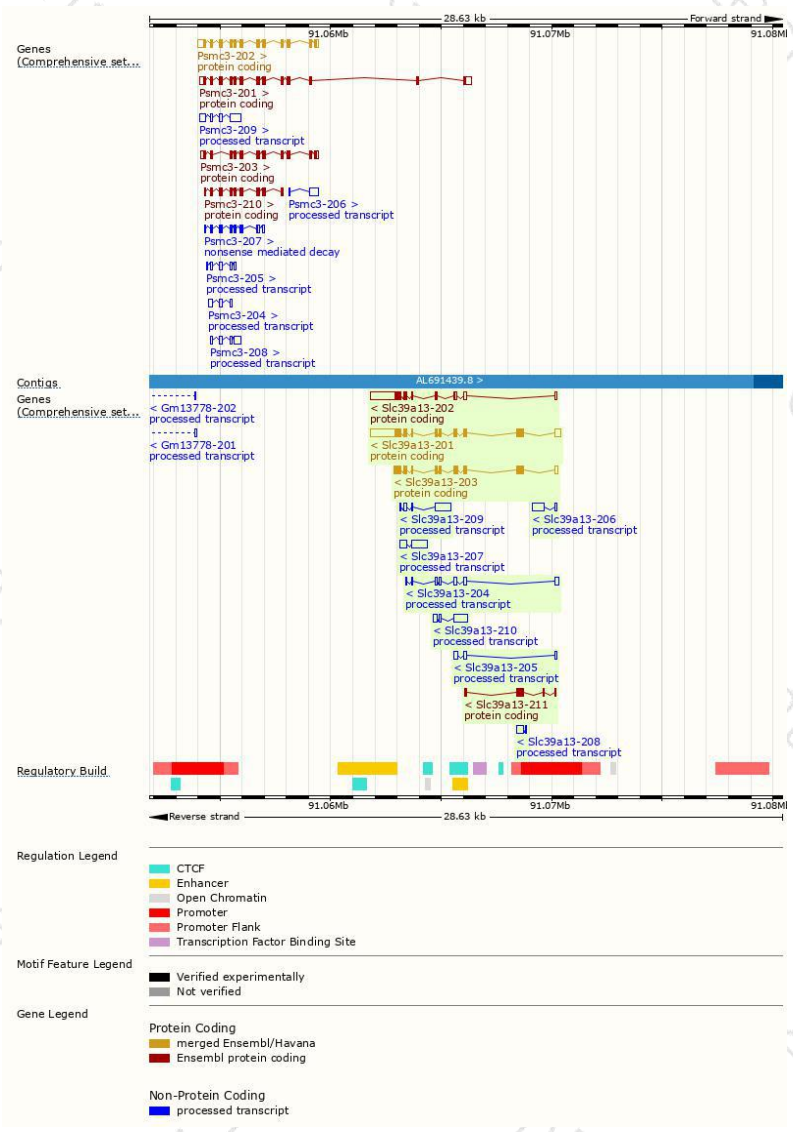
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc39a13-201	ENSMUST00000073575.11	2469	361aa	Protein coding	CCDS16424	B2RQ45 Q8BZH0	TSL:1 GENCODE basic APPRIS P1
Slc39a13-203	ENSMUST00000111436.2	1291	374aa	Protein coding	CCDS71095	Q8BZH0	TSL:1 GENCODE basic
Slc39a13-202	ENSMUST00000079976.9	1884	160aa	Protein coding	-	Q8BZH0	TSL:1 GENCODE basic
Slc39a13-211	ENSMUST00000153367.1	448	138aa	Protein coding	-	B7ZCF3	CDS 3' incomplete TSL:3
Slc39a13-207	ENSMUST00000141328.1	1059	No protein	Processed transcript	-	-	TSL:3
Slc39a13-209	ENSMUST00000149430.7	958	No protein	Processed transcript	-	-	TSL:5
Slc39a13-210	ENSMUST00000150348.1	861	No protein	Processed transcript	-	-	TSL:5
Slc39a13-204	ENSMUST00000123685.7	668	No protein	Processed transcript	-	-	TSL:3
Slc39a13-206	ENSMUST00000133047.1	621	No protein	Processed transcript	-	-	TSL:2
Slc39a13-208	ENSMUST00000142943.1	360	No protein	Processed transcript	-	-	TSL:3
Slc39a13-205	ENSMUST00000130252.7	358	No protein	Processed transcript	-	-	TSL:3

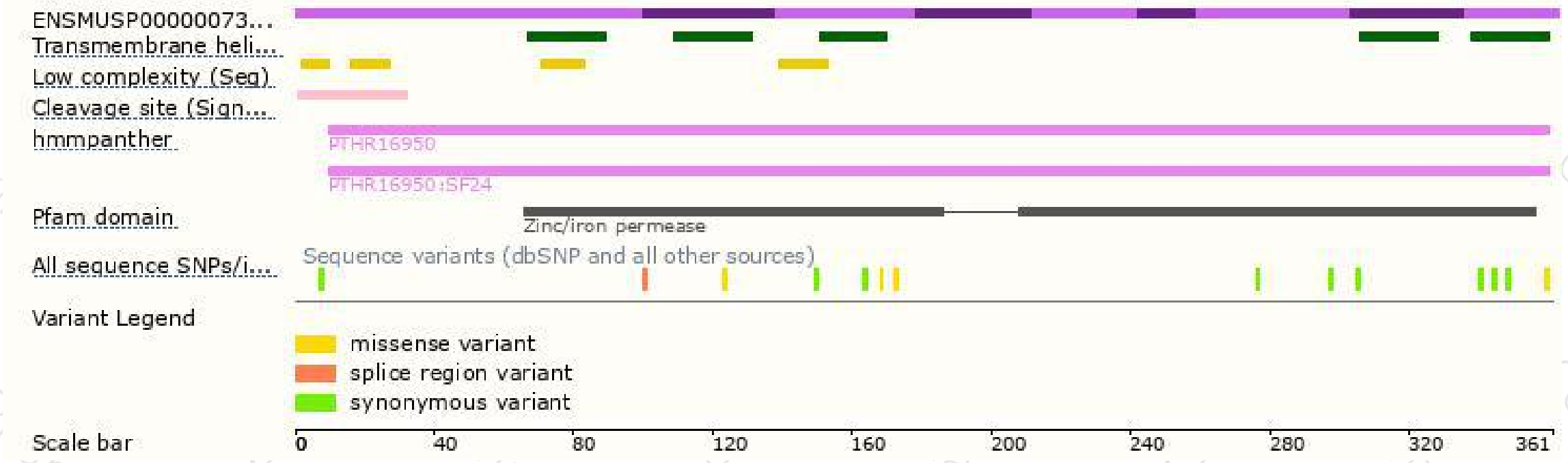
The strategy is based on the design of *Slc39a13-203* transcript,The transcription is shown below



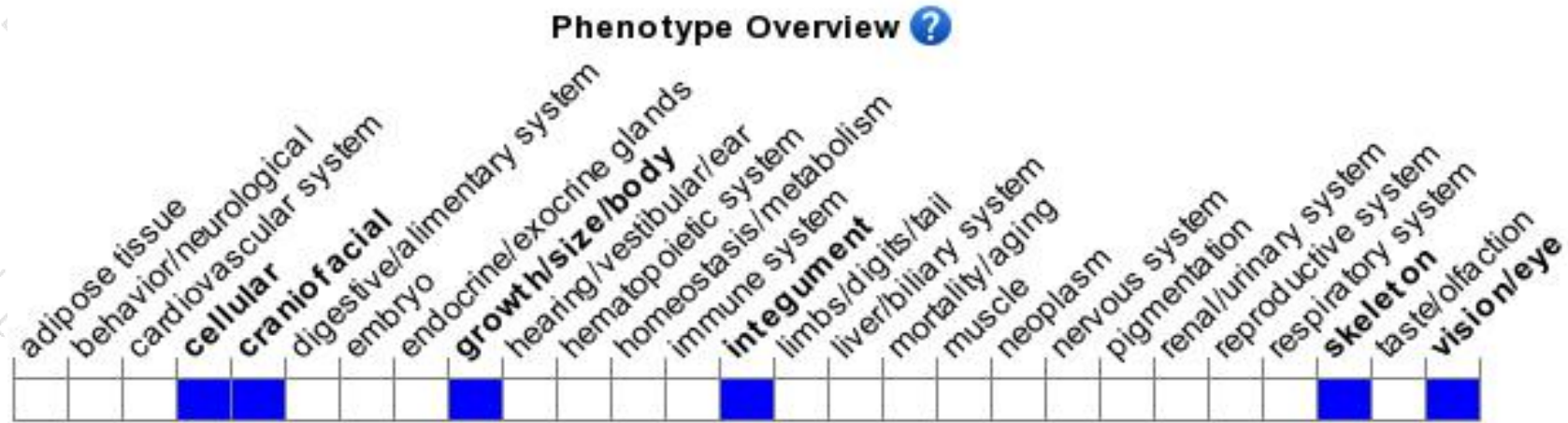
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for disruption of this gene display skeletal abnormalities and dental abnormalities.

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

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