Slc2a8 Cas9-KO Strategy

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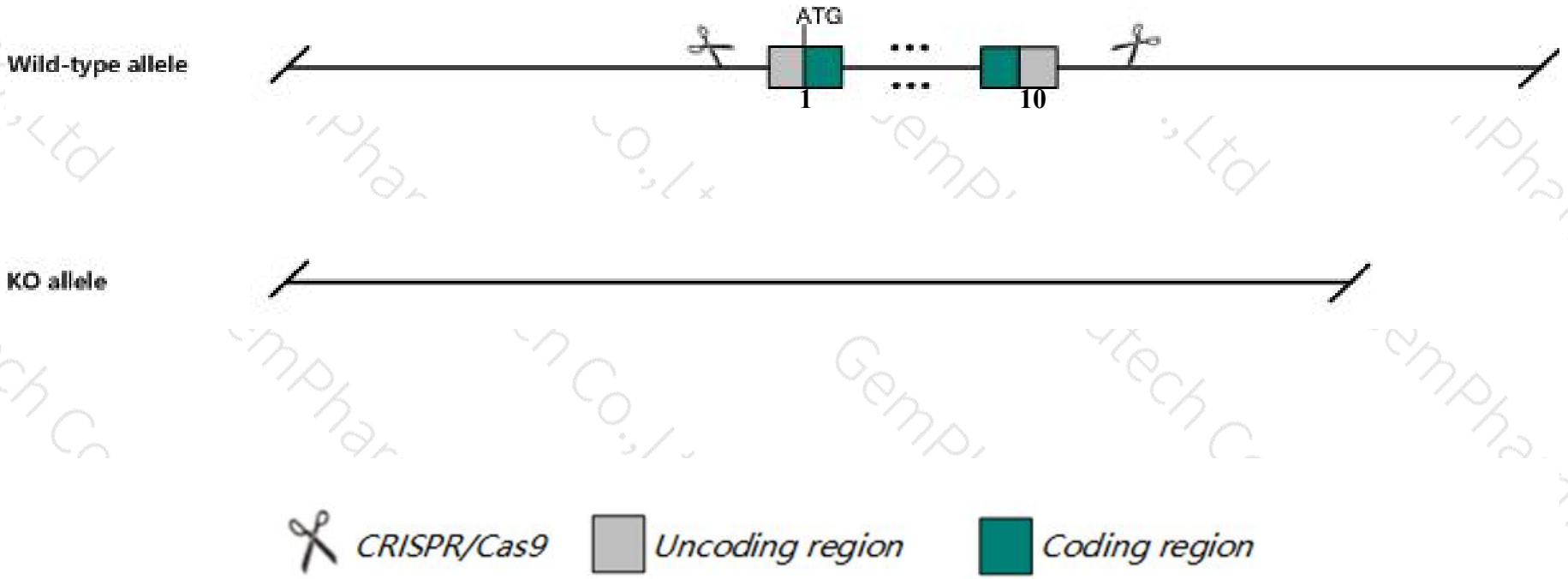
GemPharmatech Co.,Ltd

Project Overview

Project Name	***Slc2a8***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc2a8* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc2a8* gene has 8 transcripts. According to the structure of *Slc2a8* gene, exon1-exon10 of *Slc2a8-201* (ENSMUST00000028129.12) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc2a8* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Homozygotes for one null allele show reduced spermatozoan ATP levels, mitochondrial membrane potential and sperm motility, and a slight deviation from the expected Mendelian frequency. Homozygotes for another null allele show increased hippocampus cell proliferation and cardiac P-wave duration.

- The *Slc2a8* 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 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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Slc2a8 solute carrier family 2, (facilitated glucose transporter), member 8 [Mus musculus (house mouse)]

Gene ID: 56017, updated on 31-Jan-2019

Summary

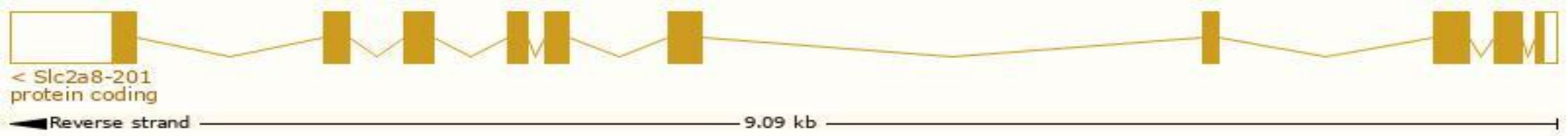
Official Symbol	Slc2a8 provided by MGI
Official Full Name	solute carrier family 2, (facilitated glucose transporter), member 8 provided by MGI
Primary source	MGI:MGI:1860103
See related	Ensembl:ENSMUSG00000026791
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	D2Ertd44e, GLUT8, GlutX1
Expression	Ubiquitous expression in adrenal adult (RPKM 64.4), ovary adult (RPKM 28.5) and 25 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

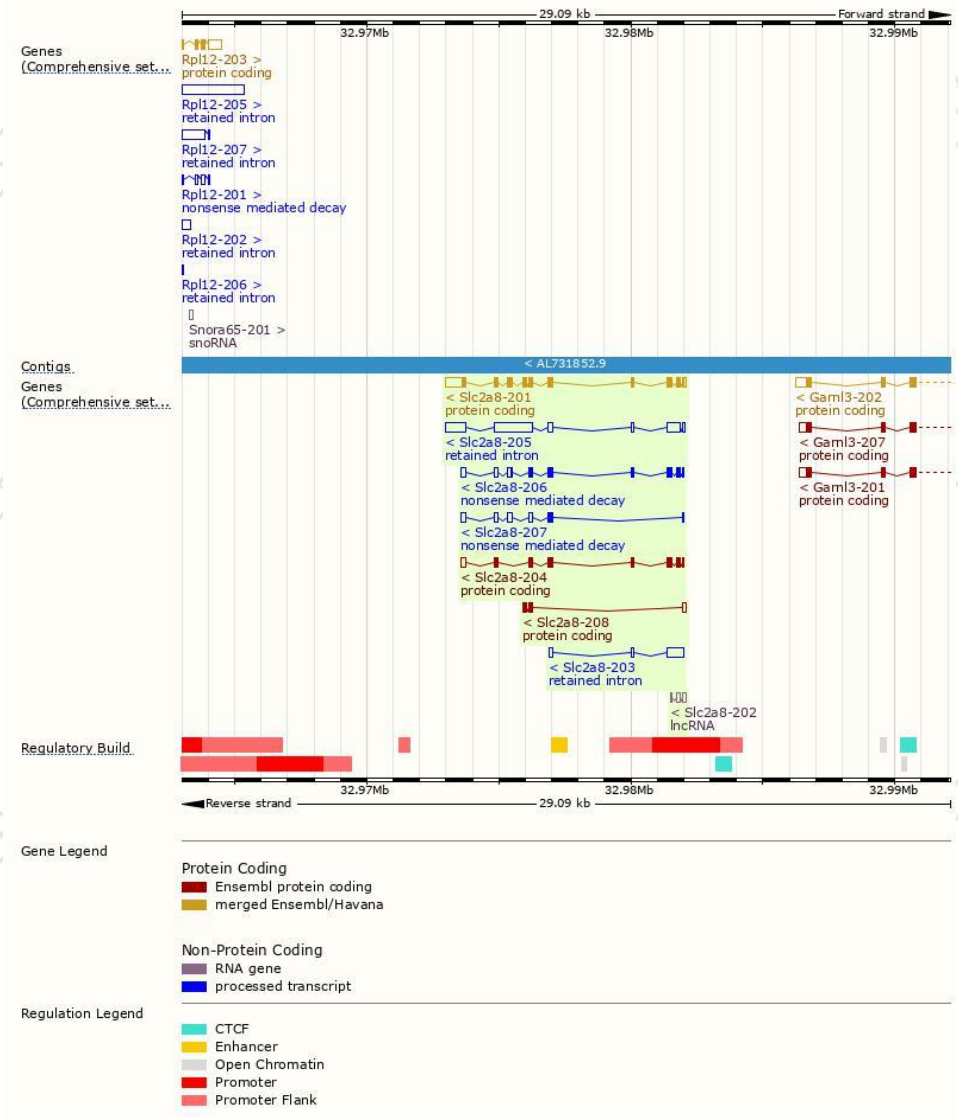
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc2a8-201	ENSMUST00000028129.12	2108	477aa	Protein coding	CCDS15937	Q9JIF3	TSL:1 GENCODE basic APPRIS P1
Slc2a8-204	ENSMUST00000153484.6	1168	329aa	Protein coding	-	Q2TK26	TSL:1 GENCODE basic
Slc2a8-208	ENSMUST00000195863.1	360	60aa	Protein coding	-	A0A0A6YX81	CDS 3' incomplete TSL:2
Slc2a8-206	ENSMUST00000193695.1	1339	291aa	Nonsense mediated decay	-	Q2TK27	TSL:1
Slc2a8-207	ENSMUST00000194066.5	869	71aa	Nonsense mediated decay	-	A0A0A6YXF7	TSL:1
Slc2a8-205	ENSMUST00000191777.5	3120	No protein	Retained intron	-	-	TSL:2
Slc2a8-203	ENSMUST00000130769.1	909	No protein	Retained intron	-	-	TSL:2
Slc2a8-202	ENSMUST00000123643.1	343	No protein	lncRNA	-	-	TSL:3

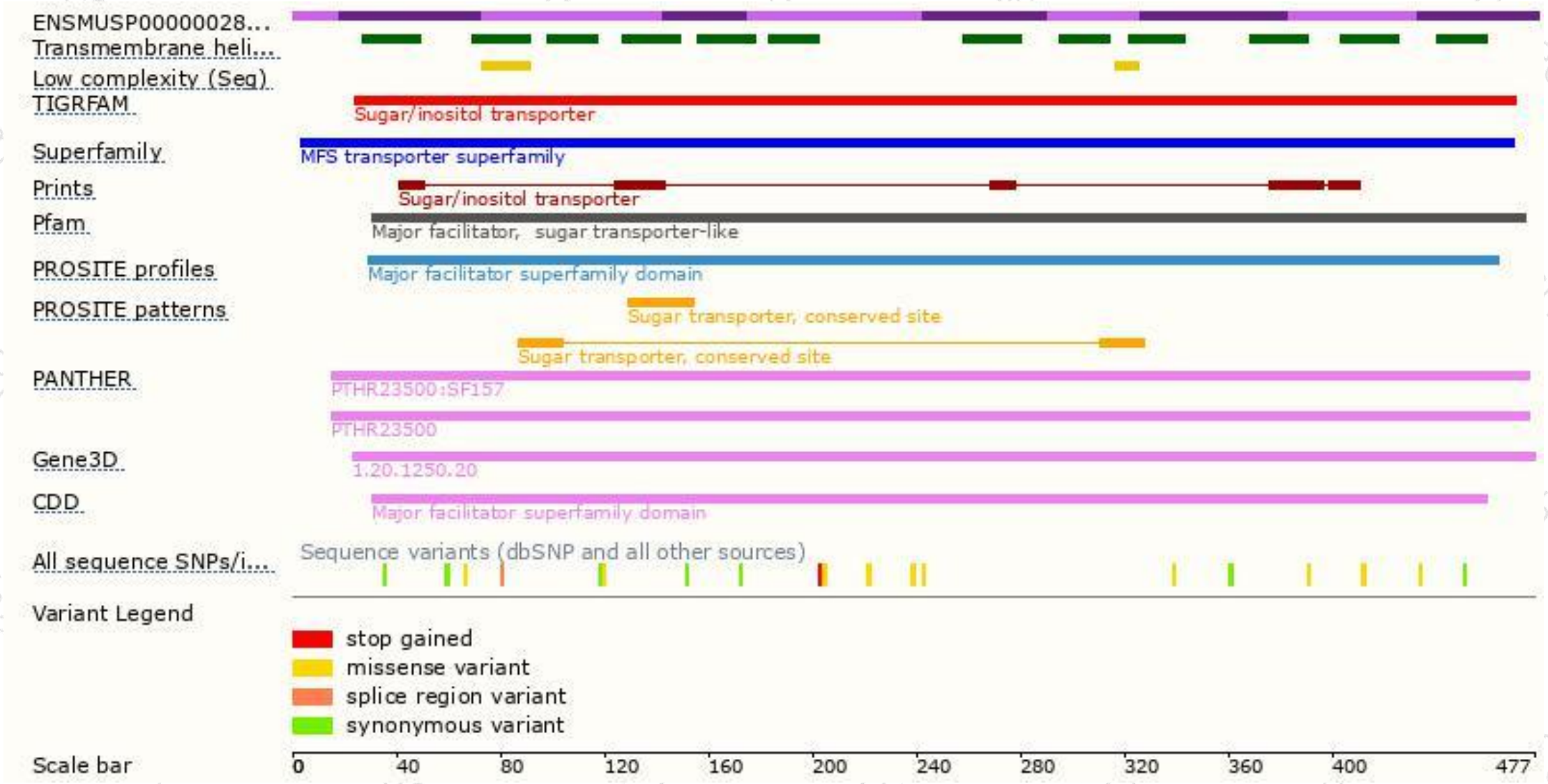
The strategy is based on the design of *Slc2a8-201* transcript,The transcription is shown below



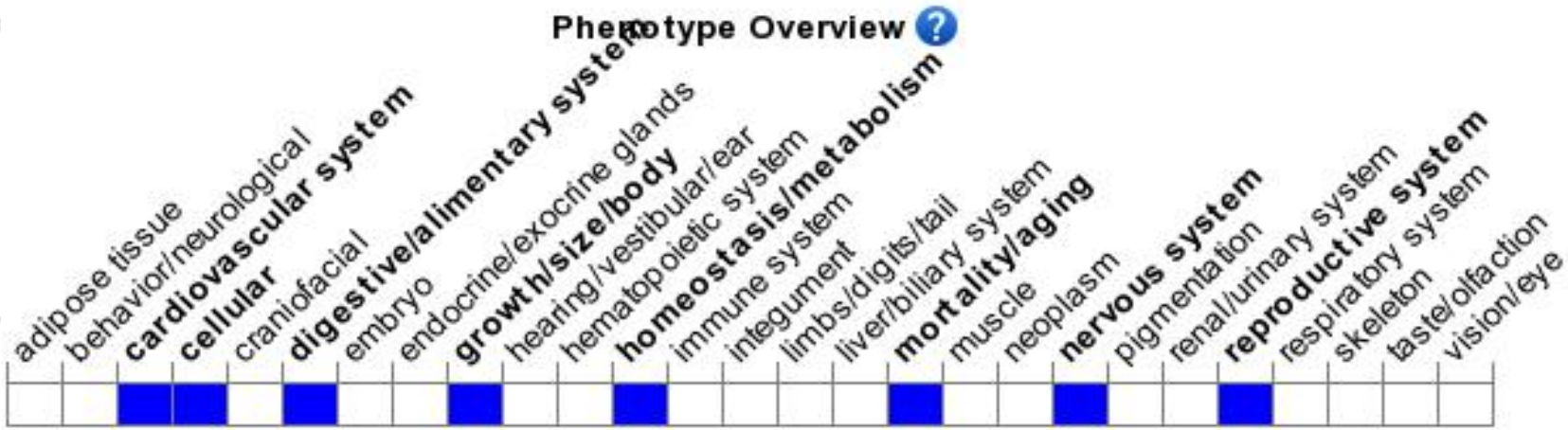
Genomic location distribution



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/).

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

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