

Gpr108 Cas9-KO Strategy

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Project Overview

Project Name

Gpr108

Project type

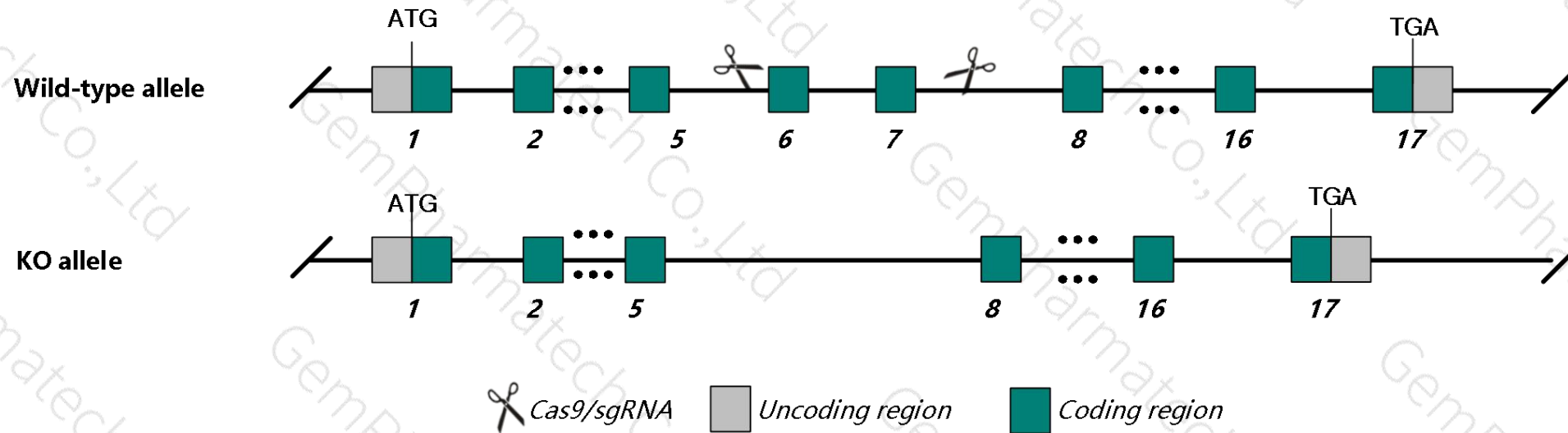
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr108* gene. The schematic diagram is as follows:



- The *Gpr108* gene has 4 transcripts. According to the structure of *Gpr108* gene, exon6-exon7 of *Gpr108-201* (ENSMUST00000005975.7) transcript is recommended as the knockout region. The region contains 278bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gpr108* 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.

- According to the existing MGI data, Mice homozygous for a null allele exhibit increased LPS-induced mortality.
- The KO region is close to 5'UTR region of the *Trip10* gene. Knockout the region may affect the regulatory function of *Trip10* gene.
- Transcript *Gpr108-203* may not be affected.
- The *Gpr108* gene is located on the Chr17. 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)

Gpr108 G protein-coupled receptor 108 [*Mus musculus* (house mouse)]

Gene ID: 78308, updated on 12-Aug-2019

Summary

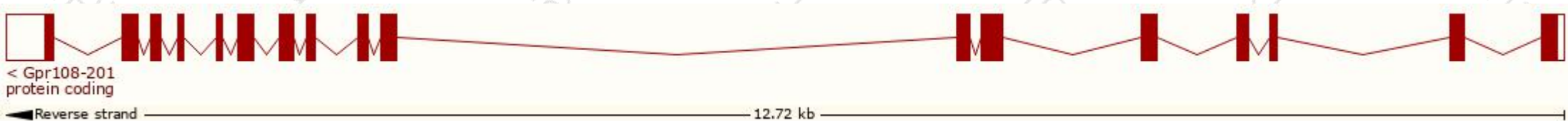
Official Symbol	Gpr108 provided by MGI
Official Full Name	G protein-coupled receptor 108 provided by MGI
Primary source	MGI:MGI:1925558
See related	Ensembl:ENSMUSG000000005823
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C79132; Lustr2; AA589464; 1810015L19Rik
Expression	Ubiquitous expression in colon adult (RPKM 41.2), adrenal adult (RPKM 30.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

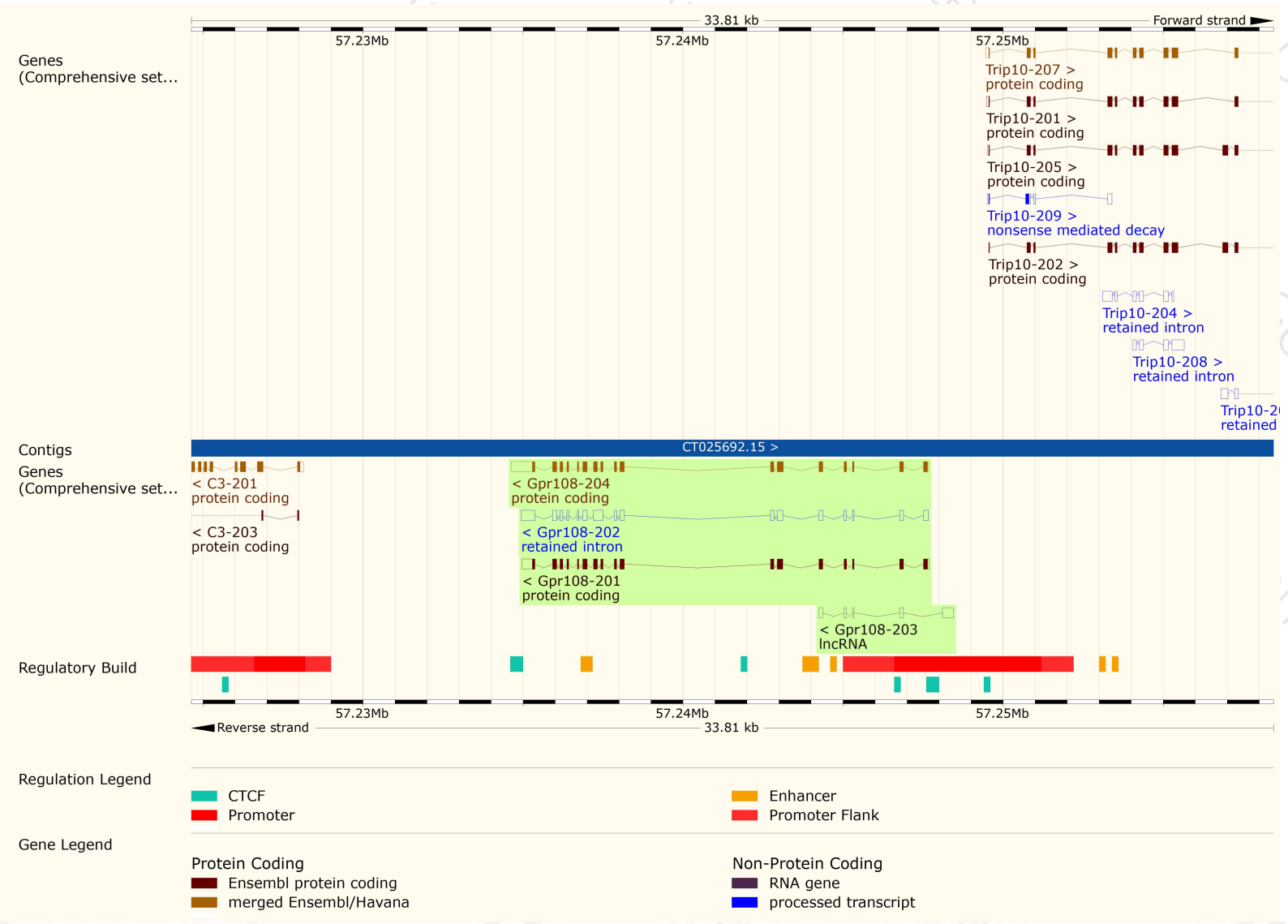
The gene has 4 transcripts,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Translation ID ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Gpr108-201	ENSMUST00000005975.7	2064	562aa	ENSMUSP00000005975.7	Protein coding	-	Q91WD0	TSL:1 GENCODE basic APPRIS ALT2
Gpr108-202	ENSMUST00000232778.1	2166	No protein	-	Retained intron	-	-	-
Gpr108-203	ENSMUST00000233492.1	716	No protein	-	lncRNA	-	-	-
Gpr108-204	ENSMUST00000233568.1	2405	569aa	ENSMUSP00000156910.1	Protein coding	CCDS28929	Q91WD0	GENCODE basic APPRIS P2

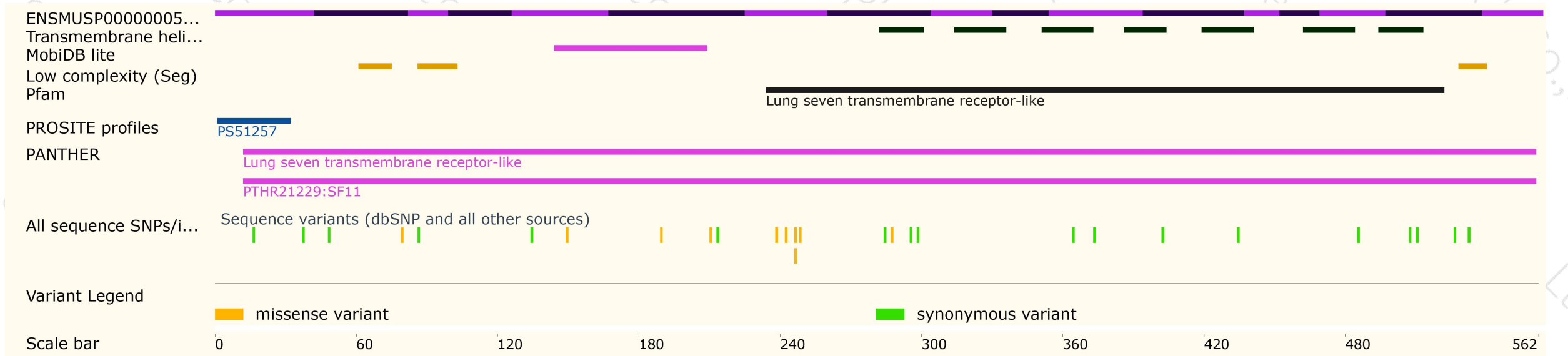
The strategy is based on the design of *Gpr108-201* transcript,The transcription is shown below



Genomic location distribution

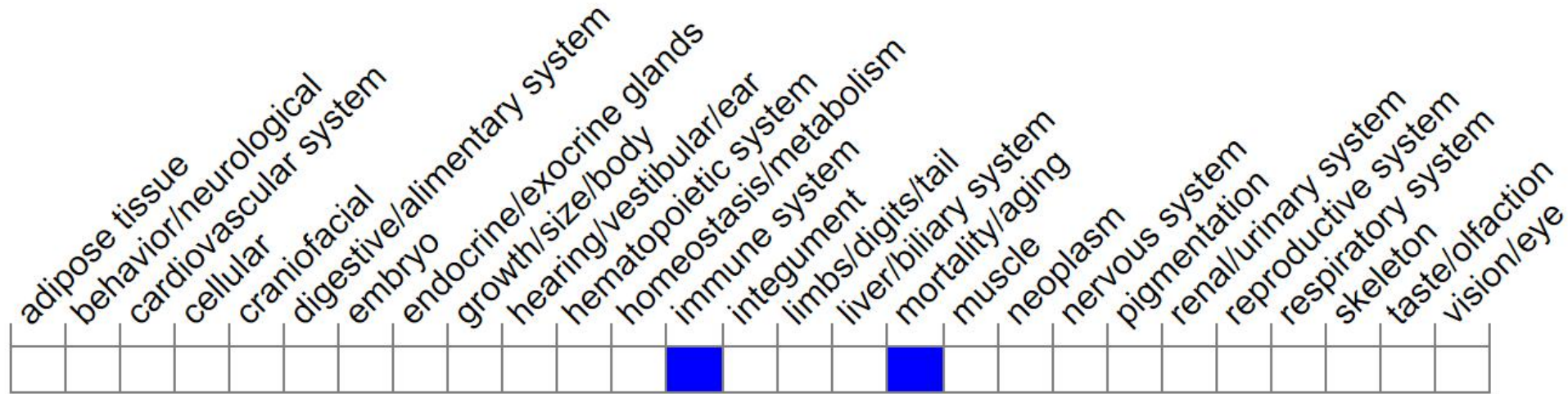


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



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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