

***Gpr149* Cas9-KO Strategy**

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Project Overview

Project Name

Gpr149

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr149* gene. The schematic diagram is as follows:



- The *Gpr149* gene has 2 transcripts. According to the structure of *Gpr149* gene, exon2 of *Gpr149-201* (ENSMUST00000058535.5) transcript is recommended as the knockout region. The region contains 193bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gpr149* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Female mice homozygous for a knock-out allele exhibit increased fertility with increased litter size and frequency.
- The *Gpr149* 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)

Gpr149 G protein-coupled receptor 149 [Mus musculus (house mouse)]

Gene ID: 229357, updated on 31-Jan-2019

Summary



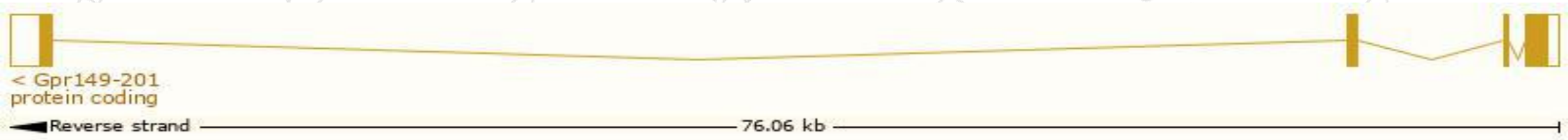
Official Symbol	Gpr149 provided by MGI
Official Full Name	G protein-coupled receptor 149 provided by MGI
Primary source	MGI:MGI:2443628
See related	Ensembl:ENSMUSG00000043441
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9630018L10Rik, Ieda, PGR10, R35
Expression	Biased expression in CNS E18 (RPKM 1.6), whole brain E14.5 (RPKM 0.6) and 8 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr149-201	ENSMUST00000058535.5	4222	732aa	Protein coding	CCDS17380	Q3UVY1	TSL:1 GENCODE basic APPRIS P1
Gpr149-202	ENSMUST00000149007.1	708	No protein	Retained intron	-	-	TSL:3

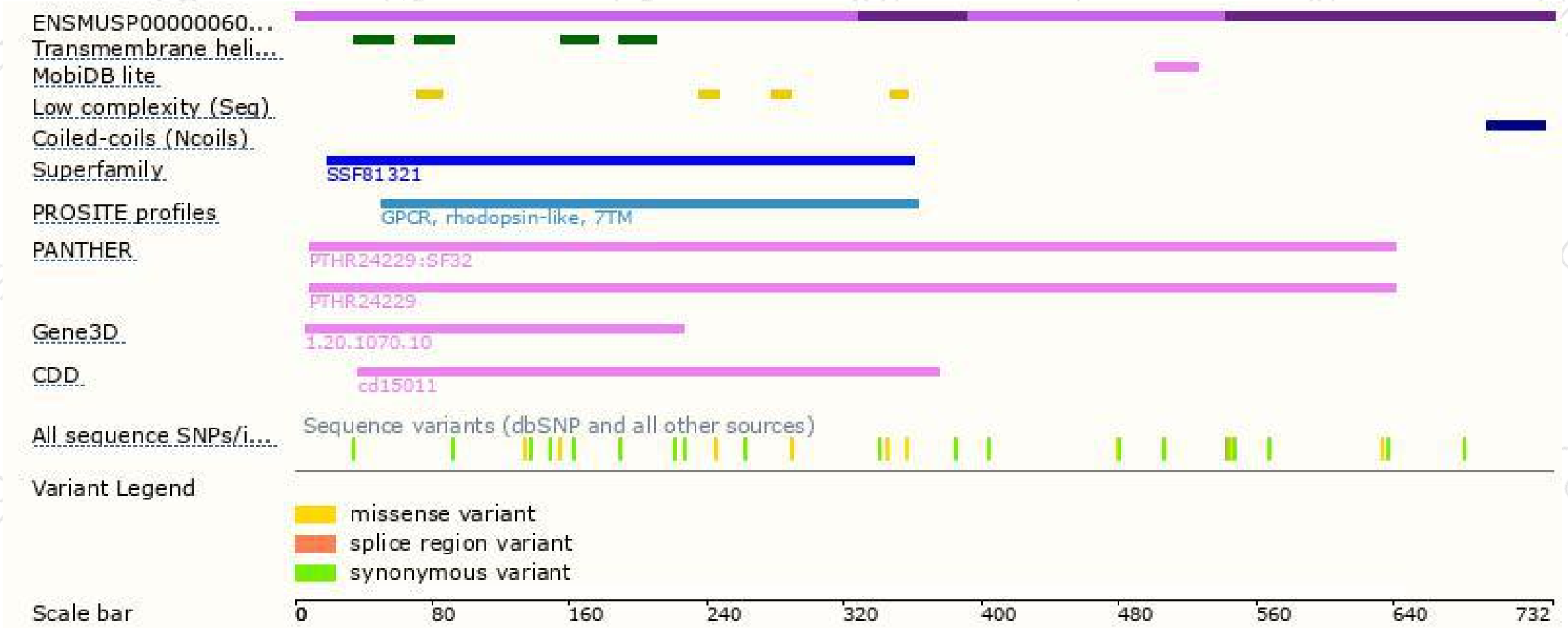
The strategy is based on the design of *Gpr149-201* transcript,The transcription is shown below



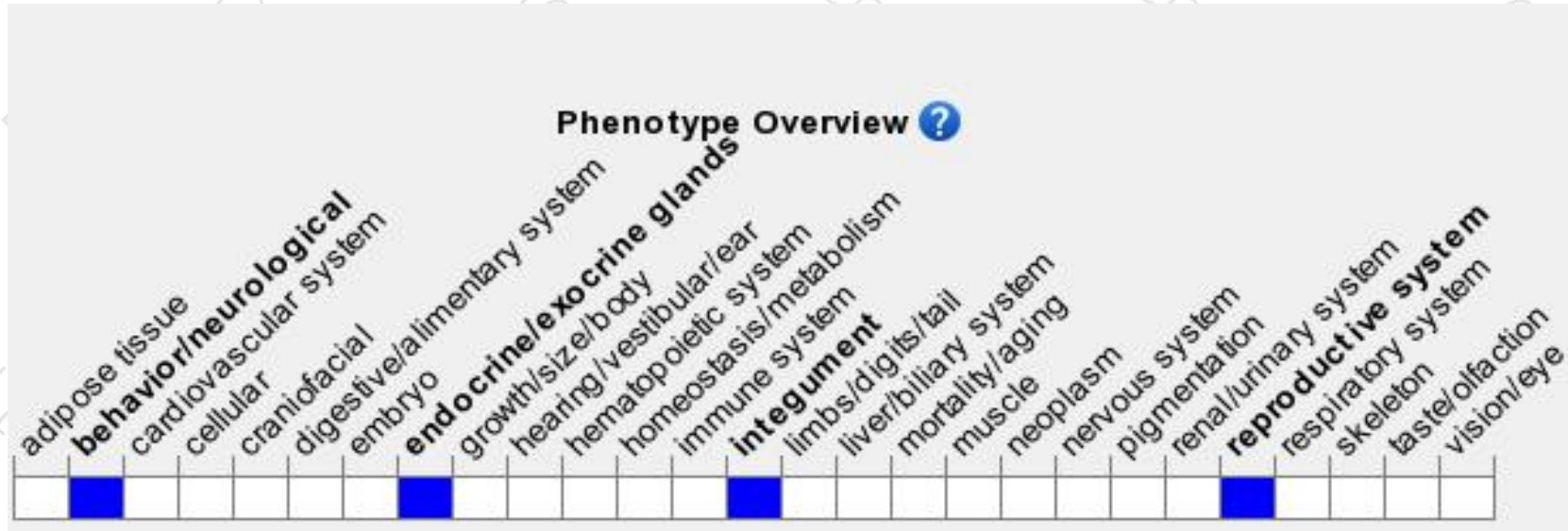
Genomic location distribution



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/>).

According to the existing MGI data, Female mice homozygous for a knock-out allele exhibit increased fertility with increased litter size and frequency.

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

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