

Gpr37 Cas9-KO Strategy

Designer:

Liu Qian

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Project Overview

Project Name

Gpr37

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr37* gene. The schematic diagram is as follows:



- The *Gpr37* gene has 2 transcripts. According to the structure of *Gpr37* gene, exon1 of *Gpr37-201* (ENSMUST00000054867.7) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gpr37* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, mice homozygous for disruptions in this gene exhibit reduced striatal dopamine content, enhanced amphetamine sensitivity, reduced motor activity and coordination and increased percentage of body fat in females.
- The *Gpr37* gene is located on the Chr6. 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)

Gpr37 G protein-coupled receptor 37 [*Mus musculus* (house mouse)]

Gene ID: 14763, updated on 12-May-2019

Summary

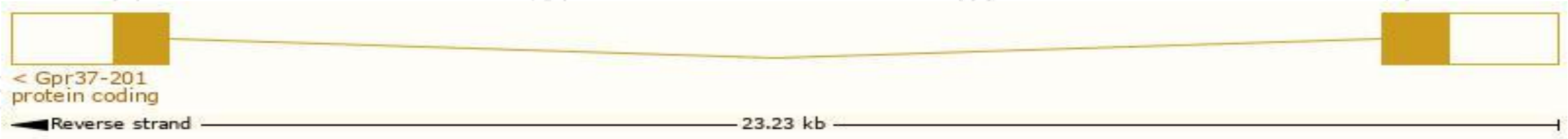
Official Symbol	Gpr37 provided by MGI
Official Full Name	G protein-coupled receptor 37 provided by MGI
Primary source	MGI:MGI:1313297
See related	Ensembl:ENSMUSG00000039904
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Pael-R; AI848630
Expression	Biased expression in cerebellum adult (RPKM 23.7), cortex adult (RPKM 13.3) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

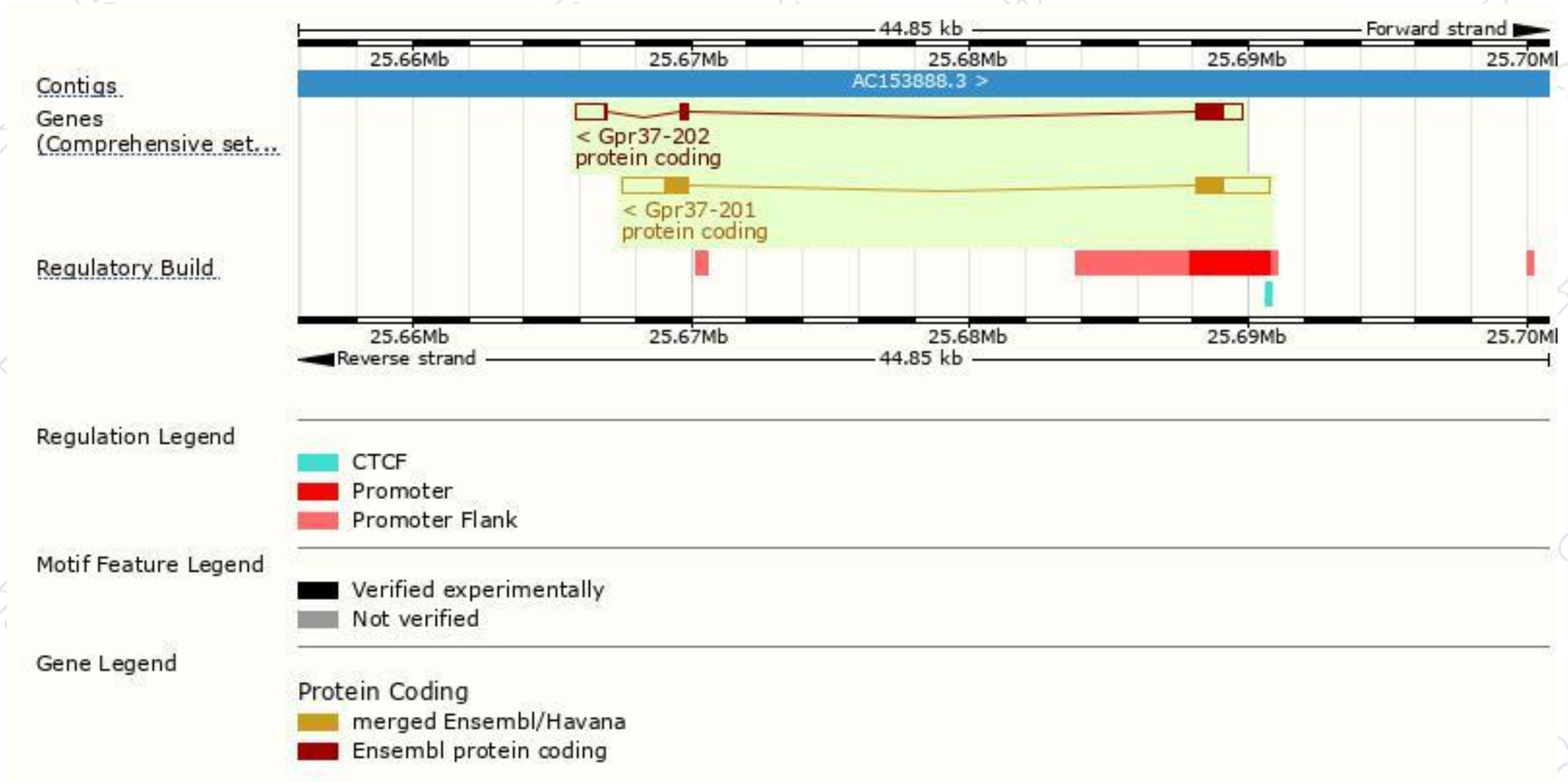
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr37-201	ENSMUST00000054867.7	4974	600aa	Protein coding	CCDS19949	Q9QY42	TSL:1 GENCODE basic APPRIS P1
Gpr37-202	ENSMUST00000200812.1	3035	440aa	Protein coding	-	Q9QY42	TSL:1 GENCODE basic

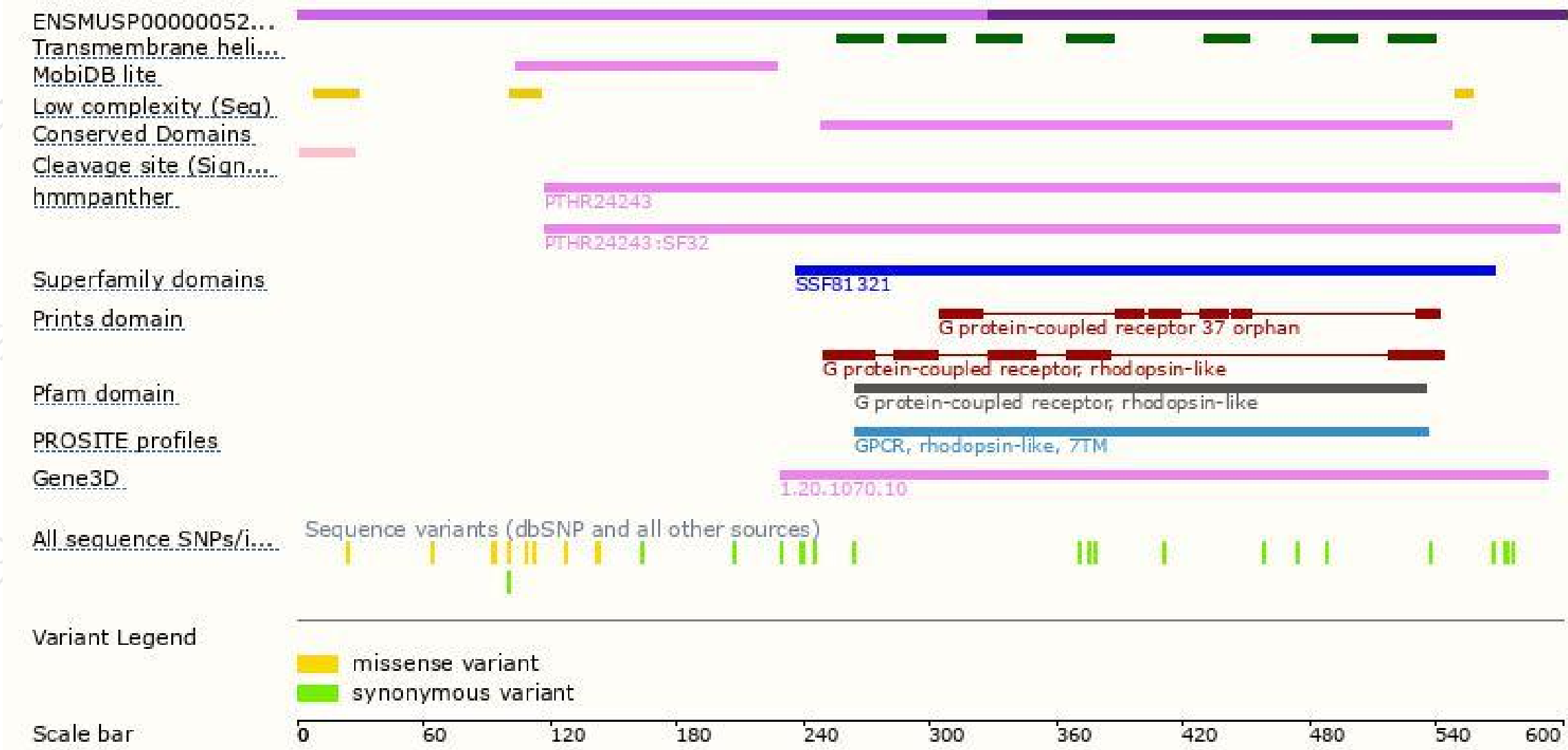
The strategy is based on the design of *Gpr37-201* transcript,The transcription is shown below



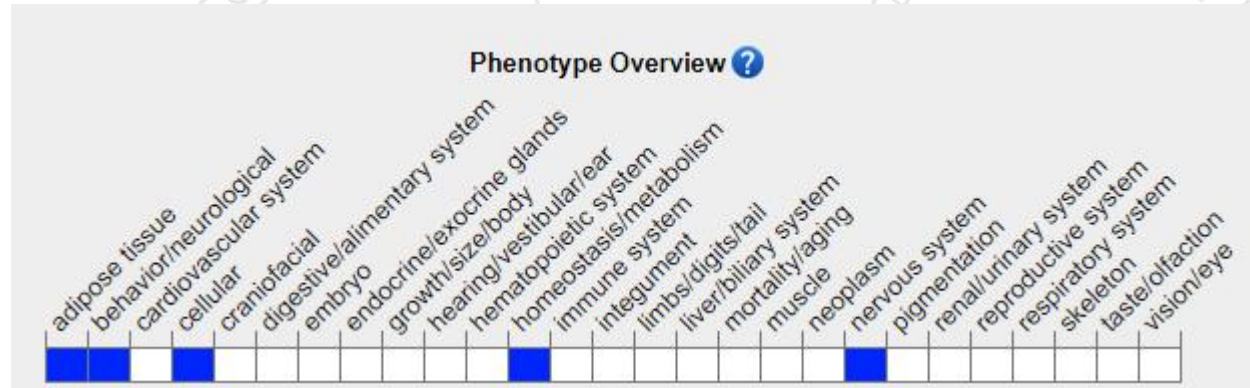
Genomic location distribution



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, Mice homozygous for disruptions in this gene exhibit reduced striatal dopamine content, enhanced amphetamine sensitivity, reduced motor activity and coordination and increased percentage of body fat in females.

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

Tel: 400-9660890

