

Gpr37l1 Cas9-CKO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Gpr3711

Project type

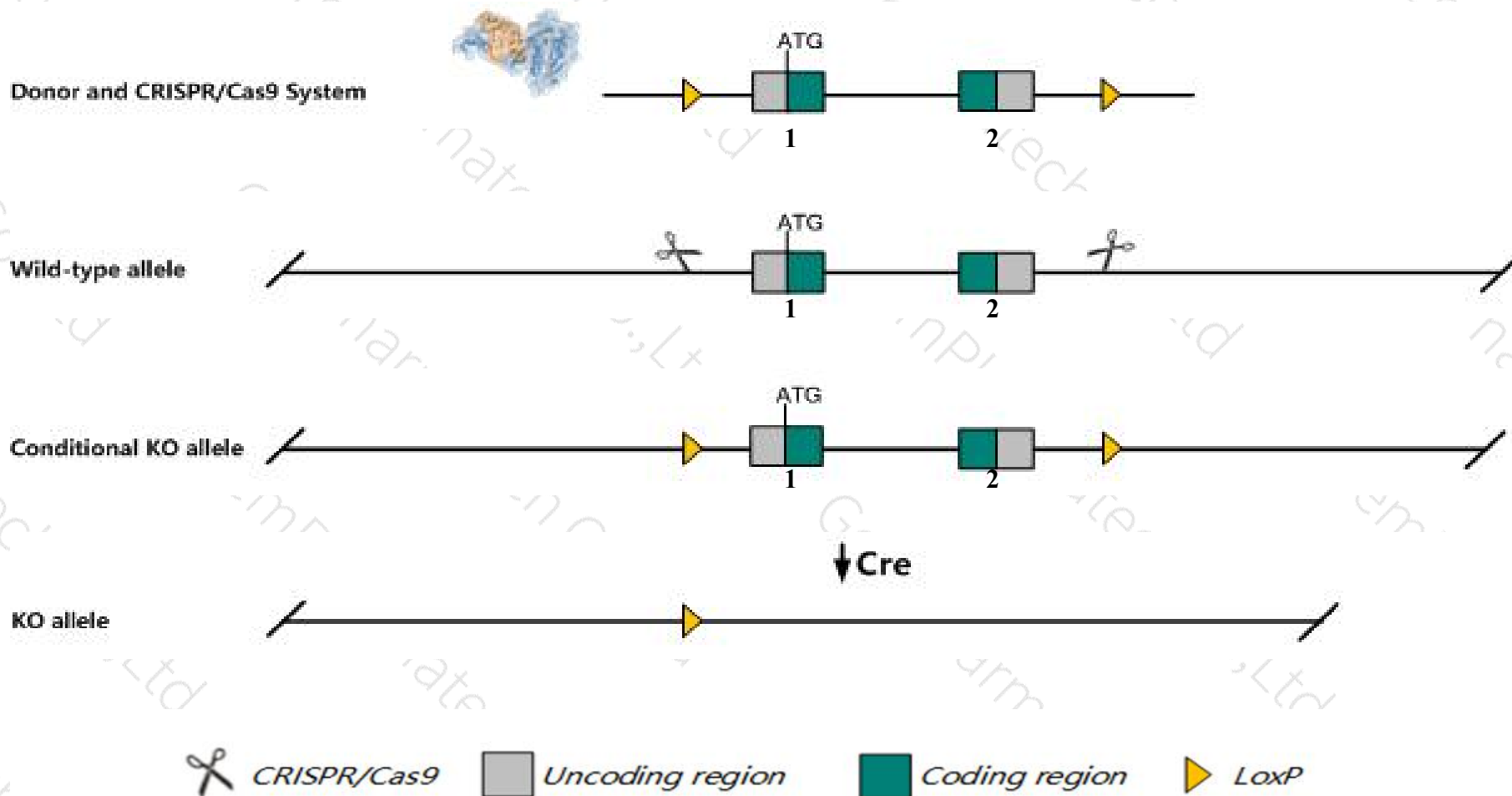
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr3711* gene. The schematic diagram is as follows:



Technical routes

- The *Gpr3711* gene has 1 transcript. According to the structure of *Gpr3711* gene, exon1-exon2 of *Gpr3711-201* (ENSMUST00000027682.8) 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 *Gpr3711* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA and Donor 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, mice homozygous for a knock-out allele may exhibit no abnormal phenotype, precocious cerebellum development and improved motor functions or abnormal blood pressure in female mice.
- The *Gpr3711* gene is located on the Chr1. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)



Gpr3711 G protein-coupled receptor 37-like 1 [*Mus musculus* (house mouse)]

Gene ID: 171469, updated on 7-May-2019

Summary

Official Symbol	Gpr3711 provided by MGI
Official Full Name	G protein-coupled receptor 37-like 1 provided by MGI
Primary source	MGI:MGI:1928503
See related	Ensembl:ENSMUSG00000026424
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	CAG-18; D0Kist8; AW047233
Expression	Biased expression in cerebellum adult (RPKM 147.0), cortex adult (RPKM 78.9) and 1 other tissue See more
Orthologs	human all

Transcript information (Ensembl)

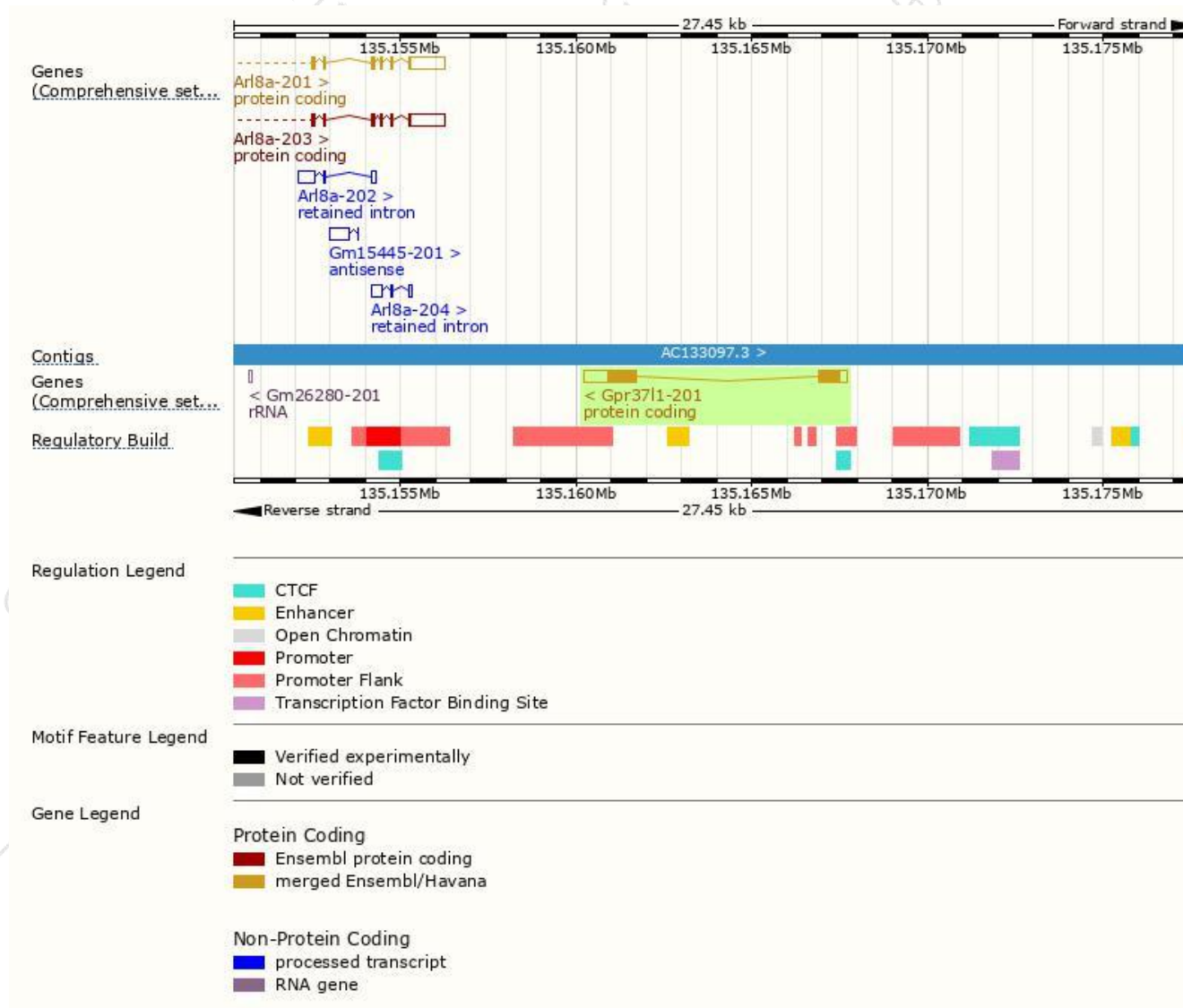
The gene has 1 transcript, and the transcript is shown below:

Show/hide columns (1 hidden)		Filter					
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr37l1-201	ENSMUST00000027682.8	2269	481aa	Protein coding	CCDS48371	Q99JG2	TSL:1 GENCODE basic APPRIS P1

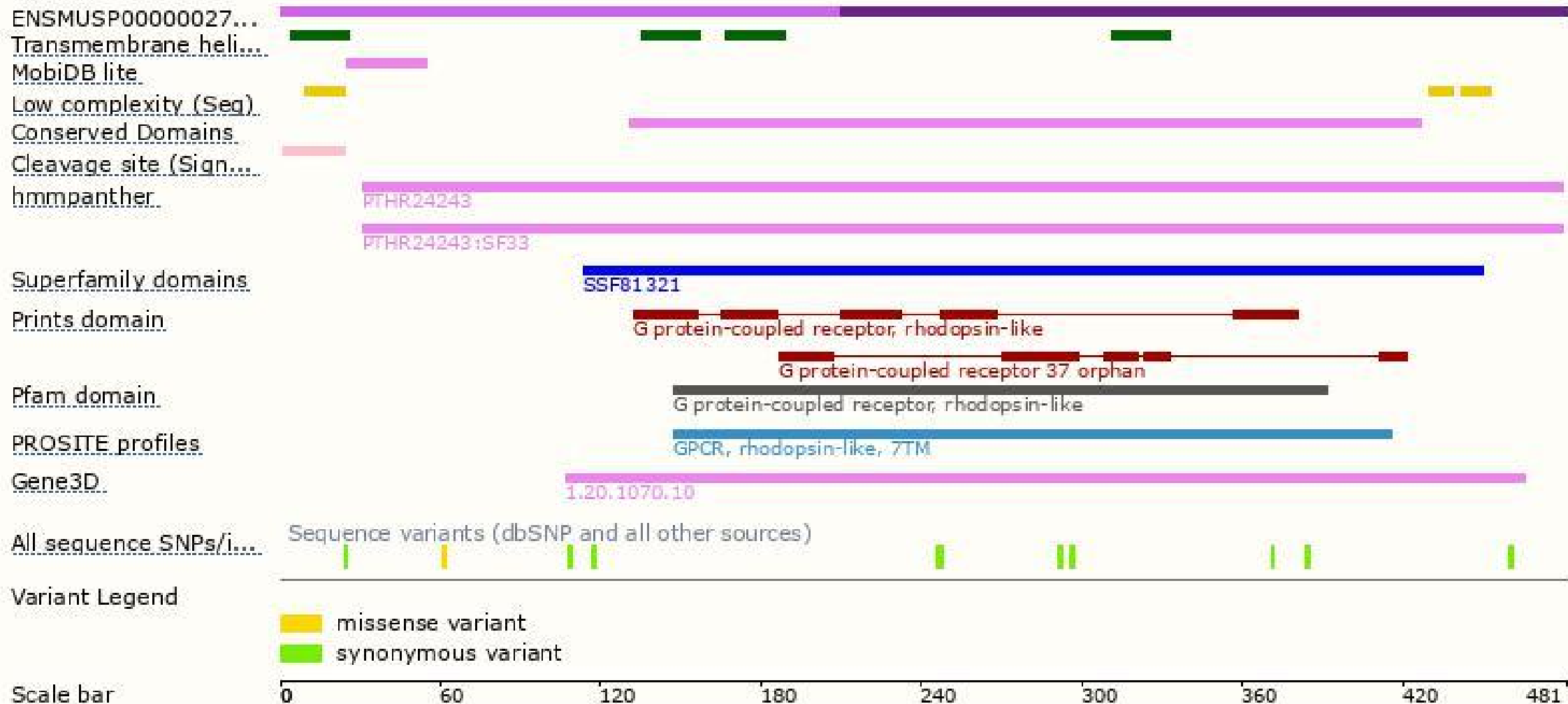
The strategy is based on the design of *Gpr37l1-201* transcript, The transcription is shown below



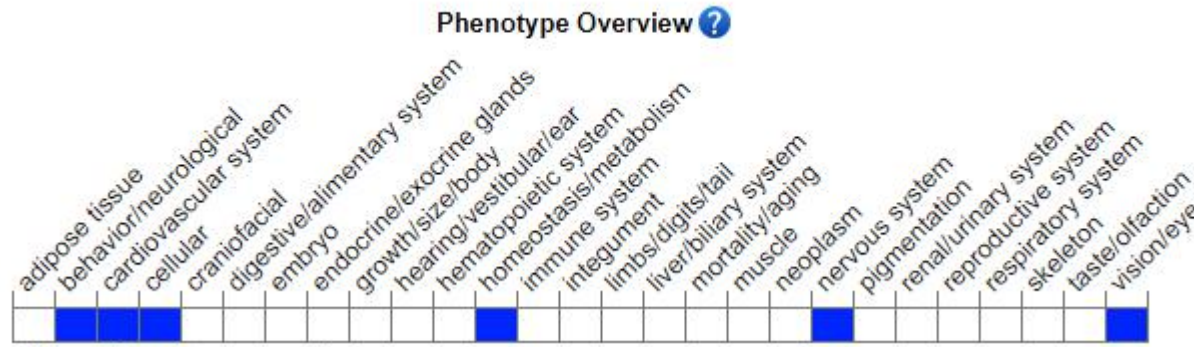
Genomic location distribution



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 a knock-out allele may exhibit no abnormal phenotype, precocious cerebellum development and improved motor functions or abnormal blood pressure in female mice.

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

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