

Gpr33 Cas9-KO Strategy

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Reviewer:

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Design Date:

2019-7-22

Project Overview

Project Name

Gpr33

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr33* gene. The schematic diagram is as follows:



- The *Gpr33* gene has 1 transcript. According to the structure of *Gpr33* gene, exon2 of *Gpr33-201* (ENSMUST00000040161.4) 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 *Gpr33* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Gpr33* gene is located on the Chr12. 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)

Gpr33 G protein-coupled receptor 33 [Mus musculus (house mouse)]

Gene ID: 14762, updated on 31-Jan-2019

Summary



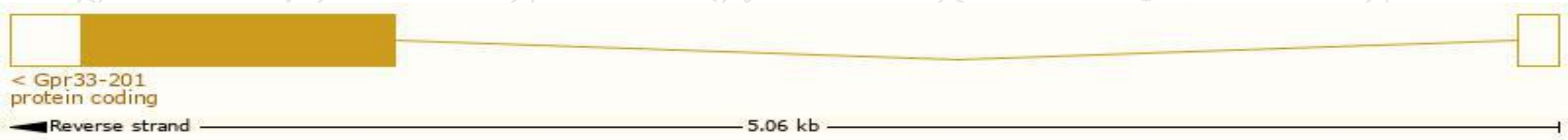
| | |
|---------------------------|---|
| Official Symbol | Gpr33 provided by MGI |
| Official Full Name | G protein-coupled receptor 33 provided by MGI |
| Primary source | MGI:MGI:1277106 |
| See related | Ensembl:ENSMUSG000000035148 |
| Gene type | protein coding |
| RefSeq status | VALIDATED |
| Organism | Mus musculus |
| Lineage | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| Expression | Low expression observed in reference dataset See more |
| Orthologs | human all |

Transcript information (Ensembl)

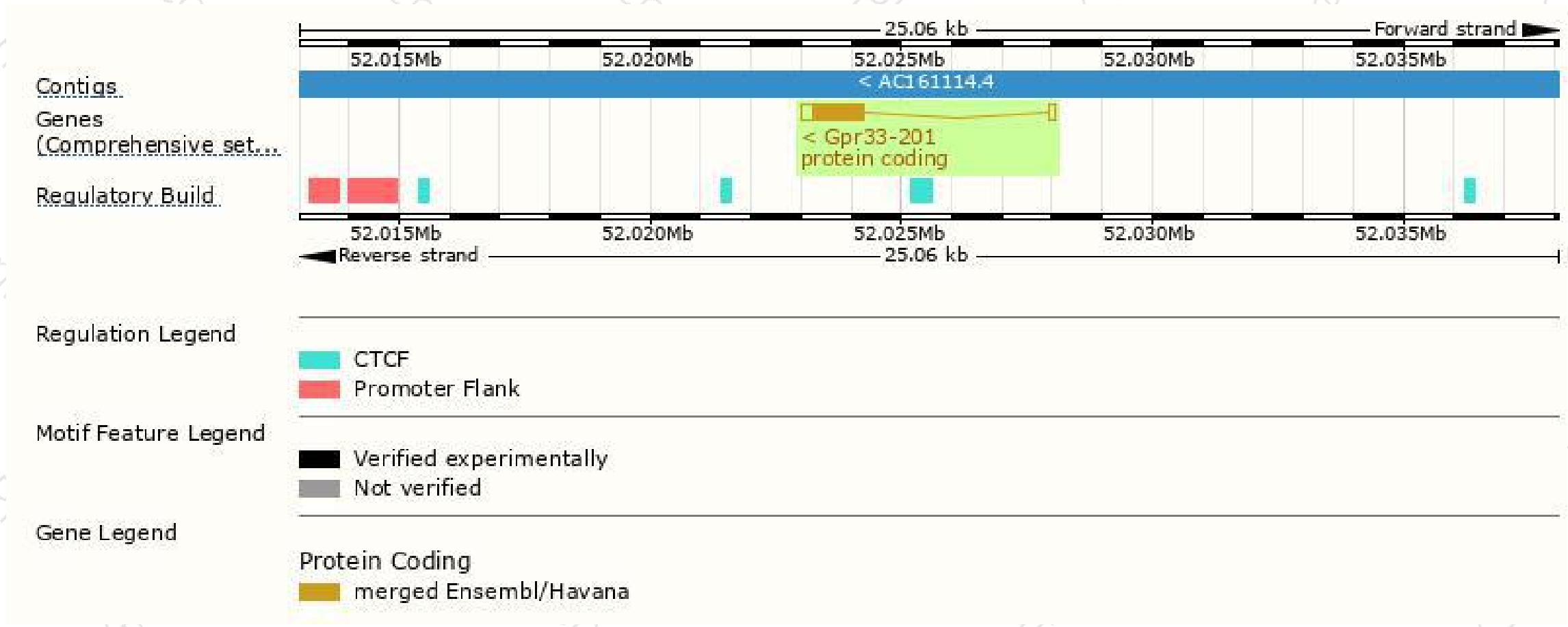
The gene has 1 transcript, and the transcript is shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|-----------|--------------------------------------|------|-----------------------|----------------|---------------------------|-------------------------------|-------------------------------|
| Gpr33-201 | ENSMUST00000040161.4 | 1388 | 339aa | Protein coding | CCDS25904 | D8VER2 O88416 | TSL:1 GENCODE basic APPRIS P1 |

The strategy is based on the design of *Gpr33-201* transcript, The transcription is shown below



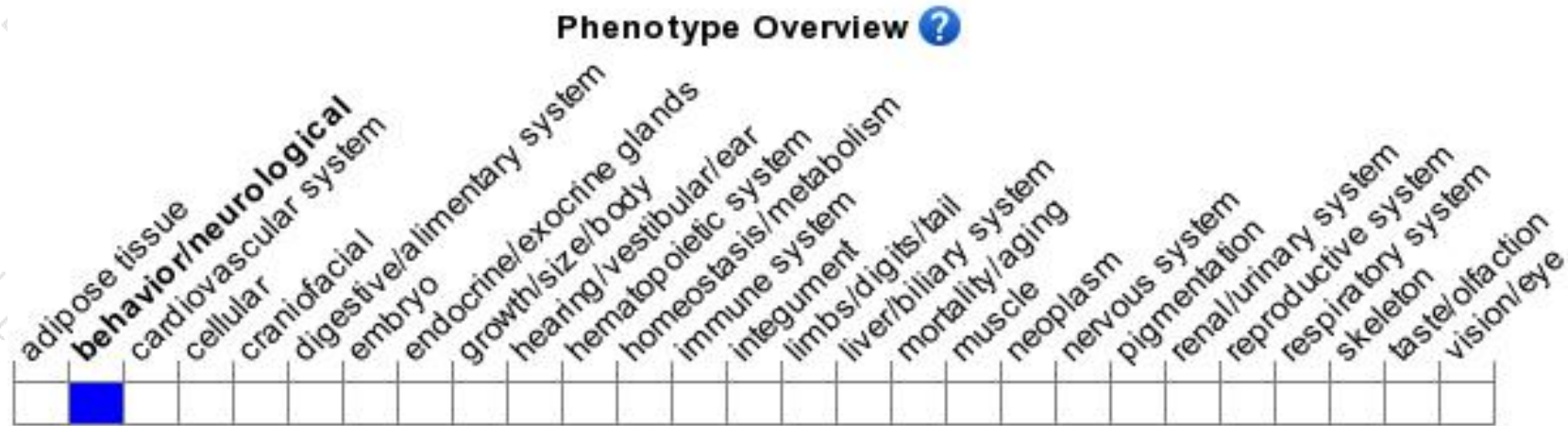
Genomic location distribution



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/>).

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

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