

Gpr52 Cas9-KO Strategy

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Project Overview

Project Name

Gpr52

Project type

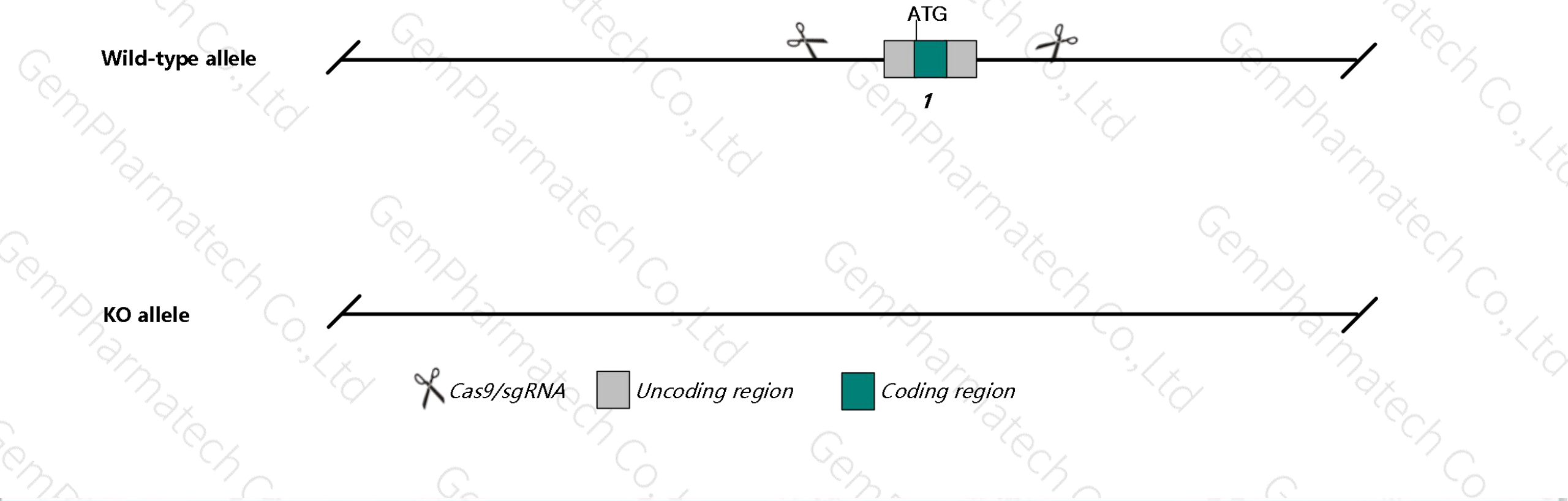
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr52* gene. The schematic diagram is as follows:



- The *Gpr52* gene has 1 transcript. According to the structure of *Gpr52* gene, exon1 of *Gpr52-201* (ENSMUST00000238289.1) 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 *Gpr52* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit decreased anxiety response in an open field test and increased startle response when treated with MK-801.
- *Gpr52* gene overlaps with the intron of *Rabgap11* gene, and the effect on *Rabgap11* gene is unknown.
- The *Gpr52* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Gpr52 G protein-coupled receptor 52 [*Mus musculus* (house mouse)]

Gene ID: 620246, updated on 24-Oct-2019

Summary



Official Symbol	Gpr52 provided by MGI
Official Full Name	G protein-coupled receptor 52 provided by MGI
Primary source	MGI:MGI:3643278
See related	Ensembl:ENSMUSG00000118401
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	EG620246
Expression	Broad expression in cortex adult (RPKM 1.5), frontal lobe adult (RPKM 1.4) and 15 other tissues See more
Orthologs	human all

Genomic context



Location: 1; 1 H2.1

Exon count: 2

See Gpr52 in [Genome Data Viewer](#)

Transcript information (Ensembl)

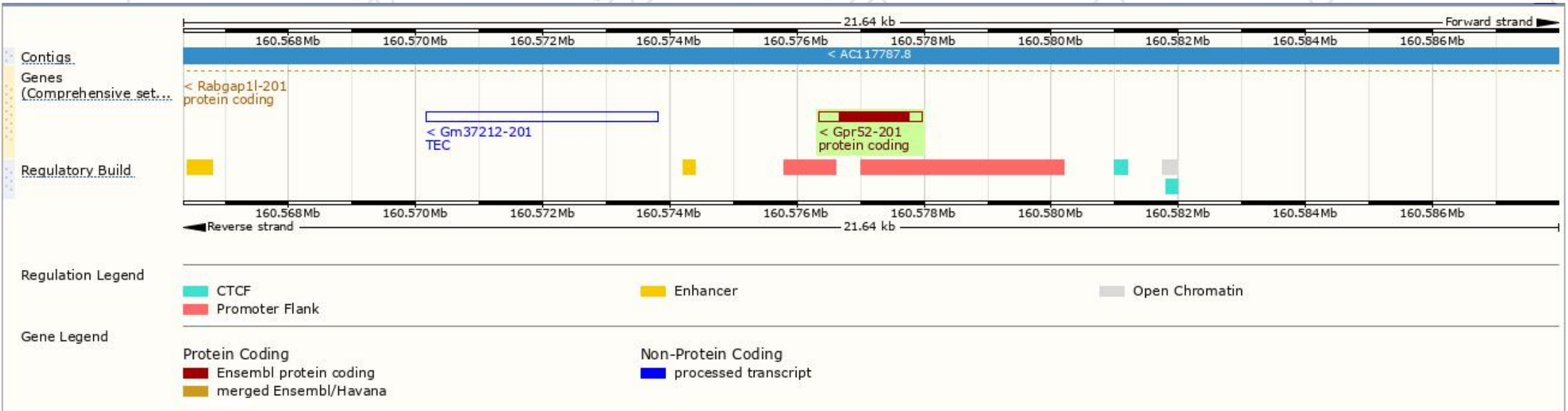
The gene has 1 transcript,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr52-201	ENSMUST00000238289.1	1637	361aa	Protein coding	-	P0C5J4	GENCODE basic APPRIS P1

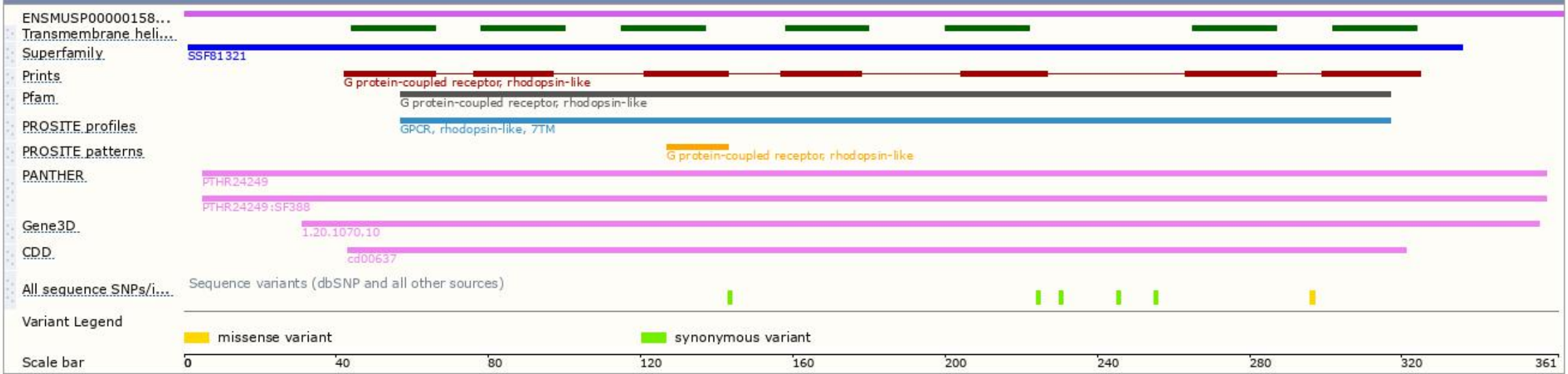
The strategy is based on the design of *Gpr52-201* transcript,The transcription is shown below



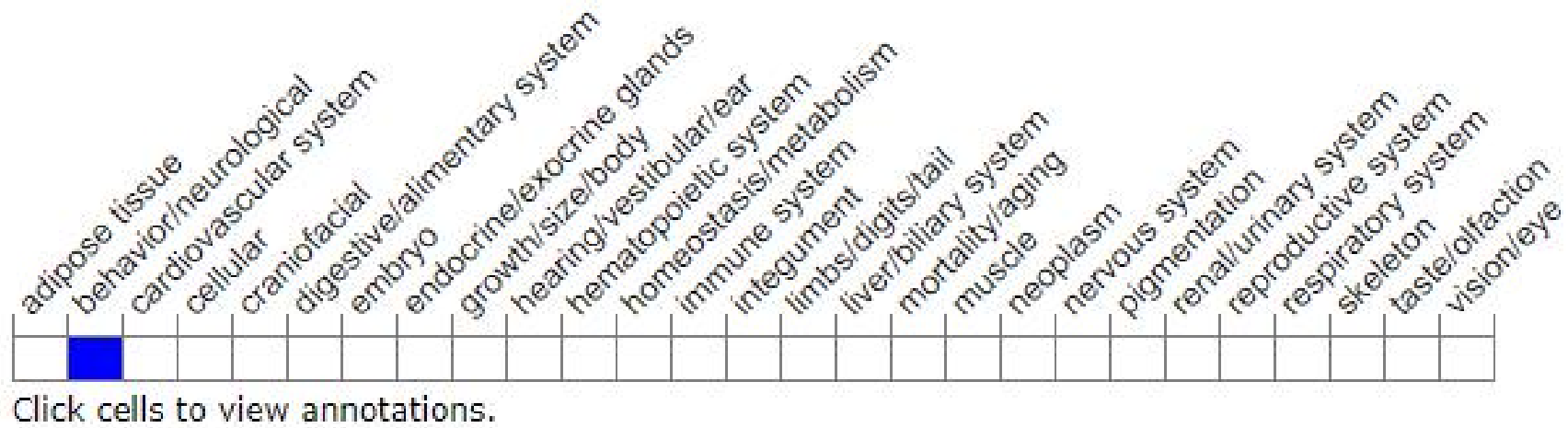
Genomic location distribution



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 exhibit decreased anxiety response in an open field test and increased startle response when treated with MK-801.

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

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