

Gpr63 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Gpr63

Project type

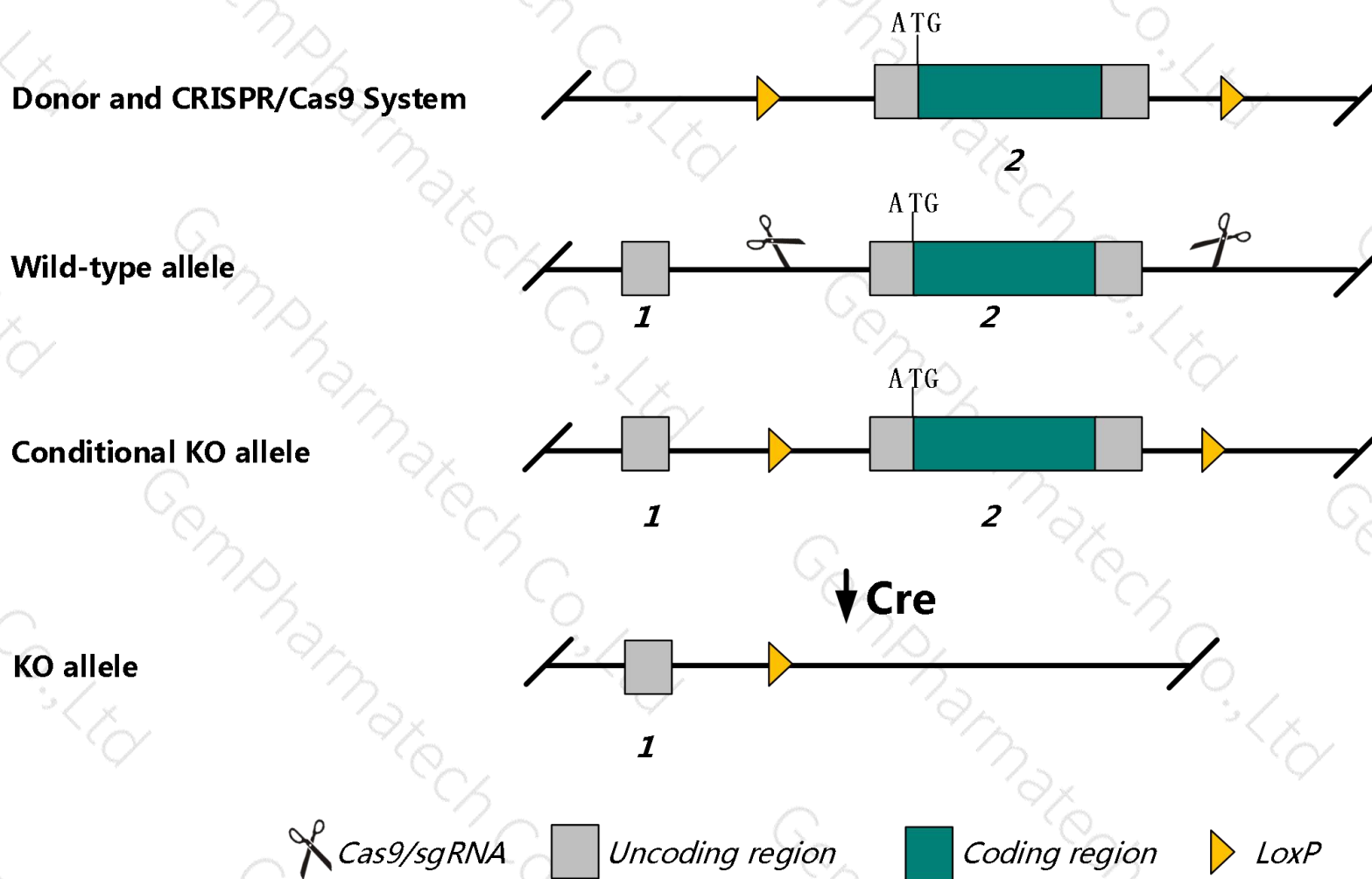
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr63* gene. The schematic diagram is as follows:



- The *Gpr63* gene has 2 transcript. According to the structure of *Gpr63* gene, exon2 of *Gpr63*-201 (ENSMUST00000038920.1) transcript is recommended as the knockout region. The region contains all coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gpr63* 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 or cell types.

- The *Gpr63* gene is located on the Chr4. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Gpr63 G protein-coupled receptor 63 [*Mus musculus* (house mouse)]

Gene ID: 81006, updated on 8-Dec-2018

Summary

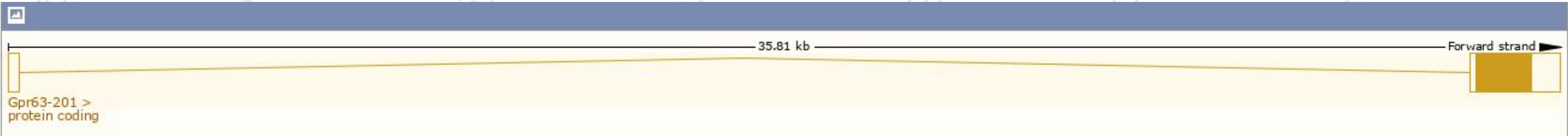
Official Symbol	Gpr63 provided by MGI
Official Full Name	G protein-coupled receptor 63 provided by MGI
Primary source	MGI:MGI:2135884
See related	Ensembl:ENSMUSG00000040372
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Psp24-2; PSP24beta
Expression	Biased expression in cerebellum adult (RPKM 4.1), CNS E18 (RPKM 1.2) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

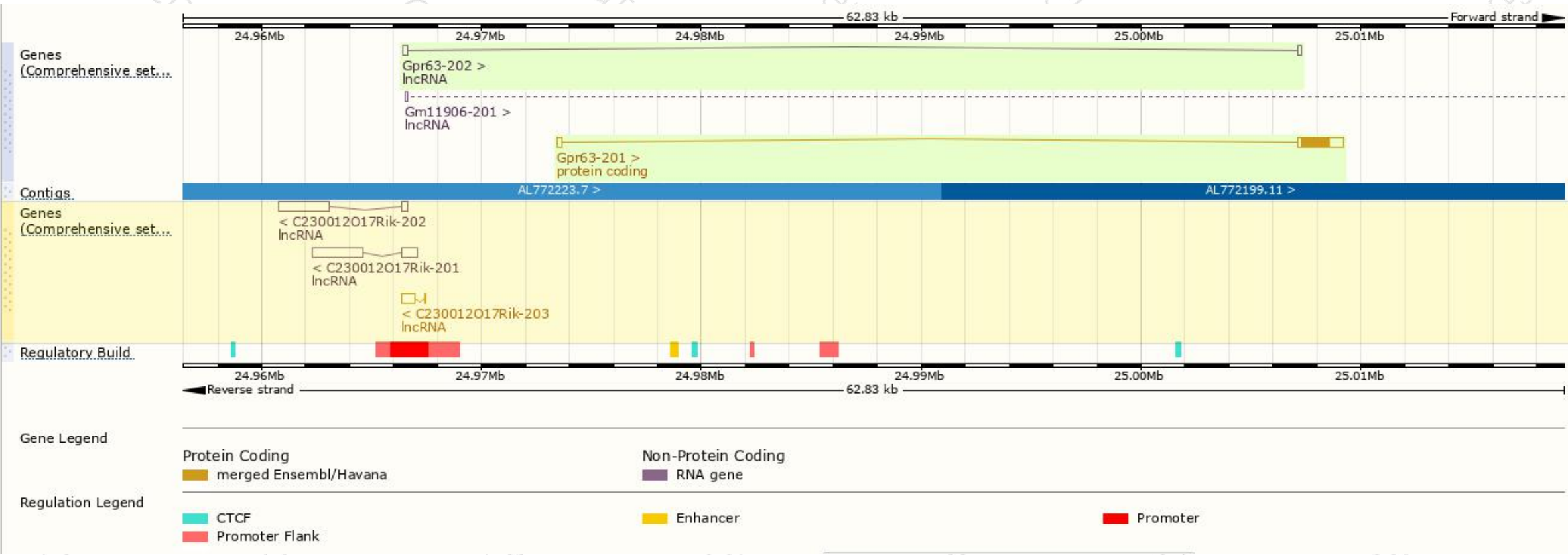
The gene has 2 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr63-201	ENSMUST00000038920.1	2370	425aa	Protein coding	CCDS18008	Q9EQQ3	TSL:1 GENCODE basic APPRIS P1
Gpr63-202	ENSMUST00000151006.1	389	No protein	lncRNA	-	-	TSL:3

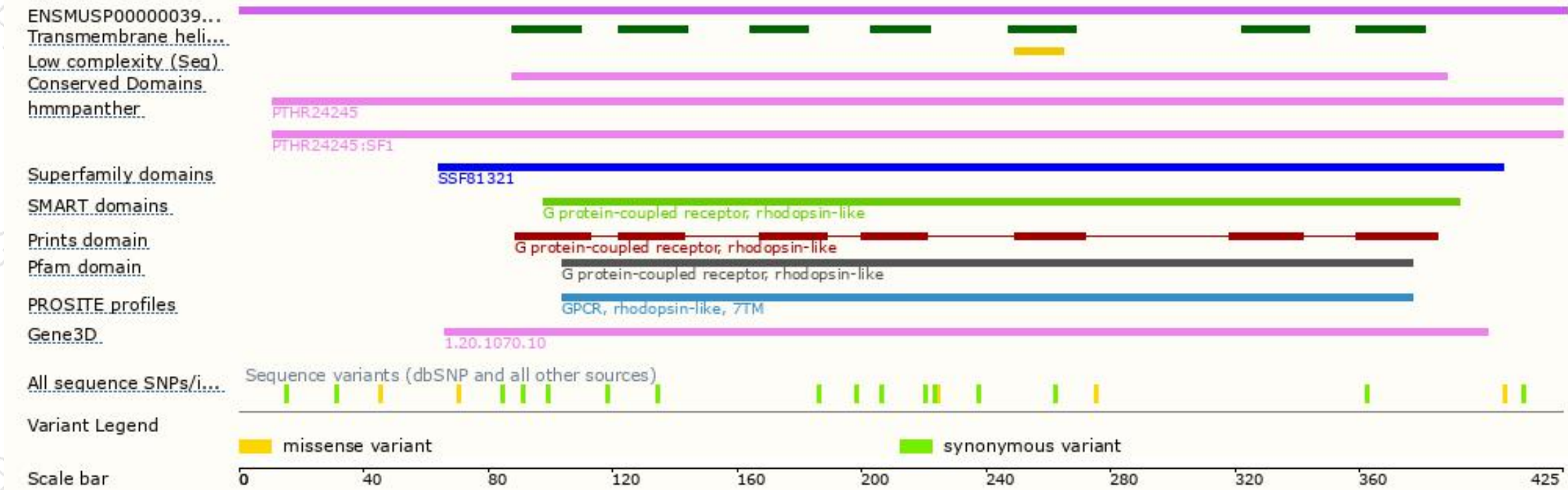
The strategy is based on the design of *Gpr63-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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