

Gpr82 Cas9-CKO Strategy

Designer:

Longyun Hu

Reviewer:

Yun Li

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Project Overview

Project Name

Gpr82

Project type

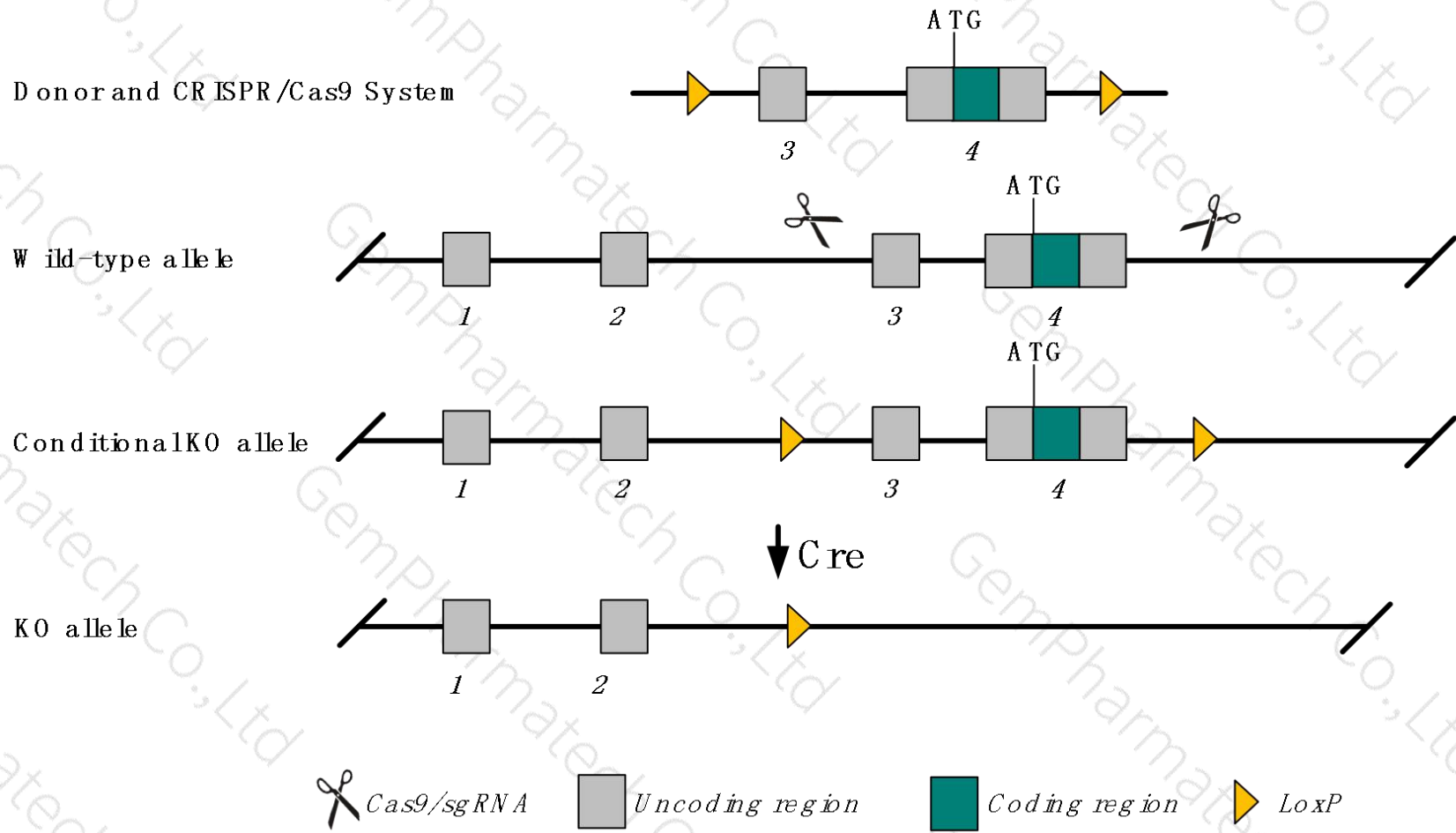
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gpr82* gene. The schematic diagram is as follows:



- The *Gpr82* gene has 1 transcript. According to the structure of *Gpr82* gene, exon 3-4 of *Gpr82*-201 (ENSMUST00000053659.1) 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 *Gpr82* 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 KO region contains functional region of the *Cask* gene. Knockout the region may affect the function of *Cask* gene.
- The *Gpr82* gene is located on the Chr X. 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.
- The CKO region contains functional region of the *Cask* gene. Knockout the region affect the function of *Cask* gene.
- 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)

Gpr82 G protein-coupled receptor 82 [*Mus musculus* (house mouse)]

Gene ID: 319200, updated on 31-Jan-2019

Summary



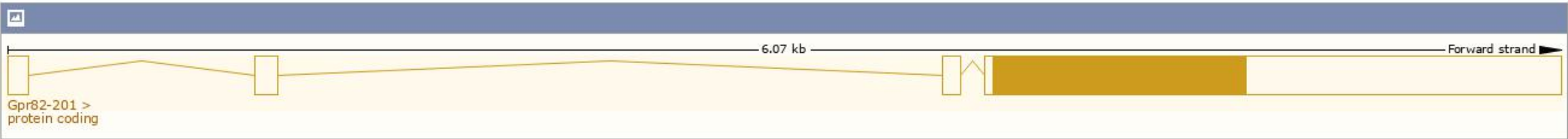
Official Symbol	Gpr82 provided by MGI
Official Full Name	G protein-coupled receptor 82 provided by MGI
Primary source	MGI:MGI:2441734
See related	Ensembl:ENSMUSG00000047678
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Biased expression in genital fat pad adult (RPKM 1.5), whole brain E14.5 (RPKM 0.1) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

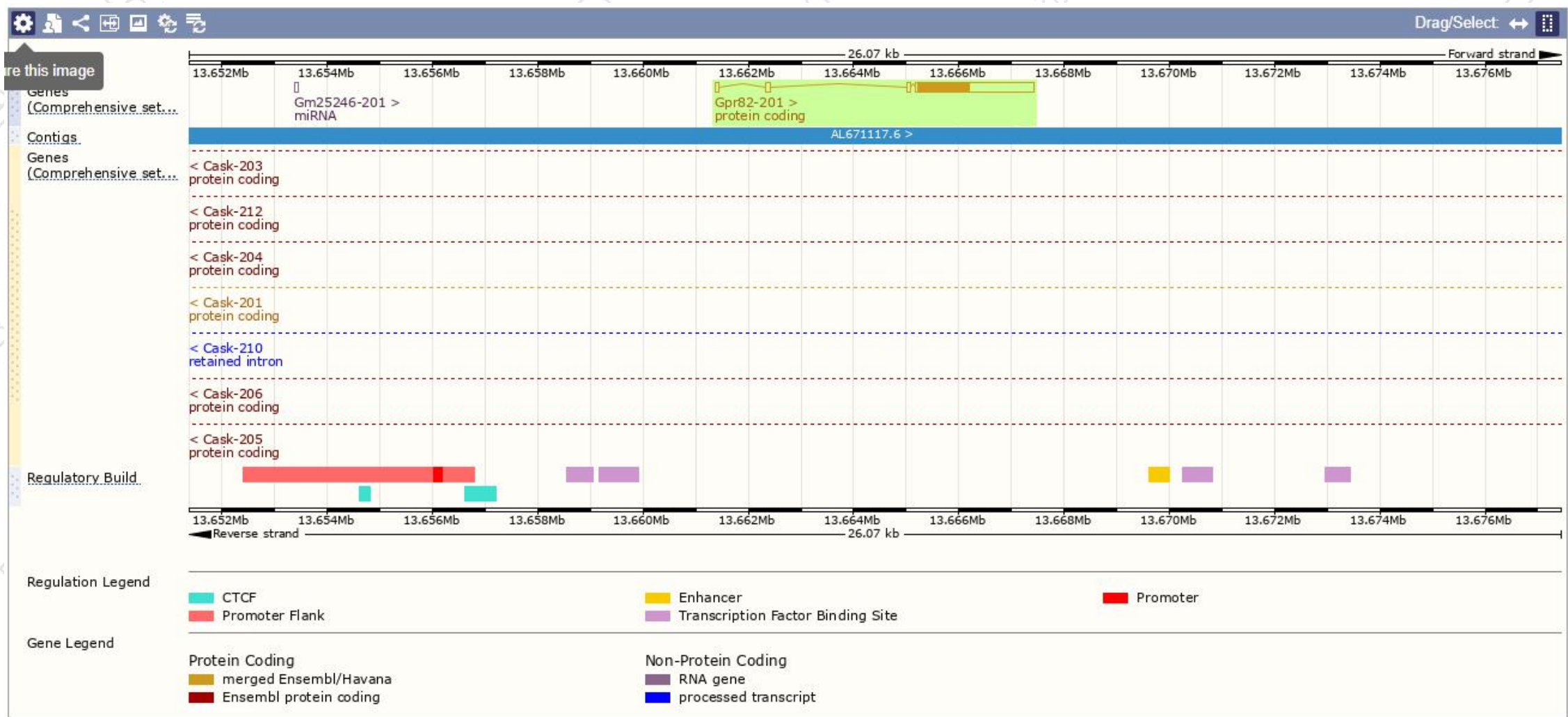
The gene has 1 transcript, and the transcript is shown below:

Show/hide columns (1 hidden)							Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags	
Gpr82-201	ENSMUST00000053659.1	2497	328aa	Protein coding	CCDS30029	Q8BZR0	TSL:1	GENCODE basic APPRIS P1

The strategy is based on the design of *Gpr82-201* transcript, The transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.
Tel: 400-9660890



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