

Gpr31b Cas9-KO Strategy

Designer:

Daohua Xu

Reviewer:

Huimin Su

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Project Overview

Project Name

Gpr31b

Project type

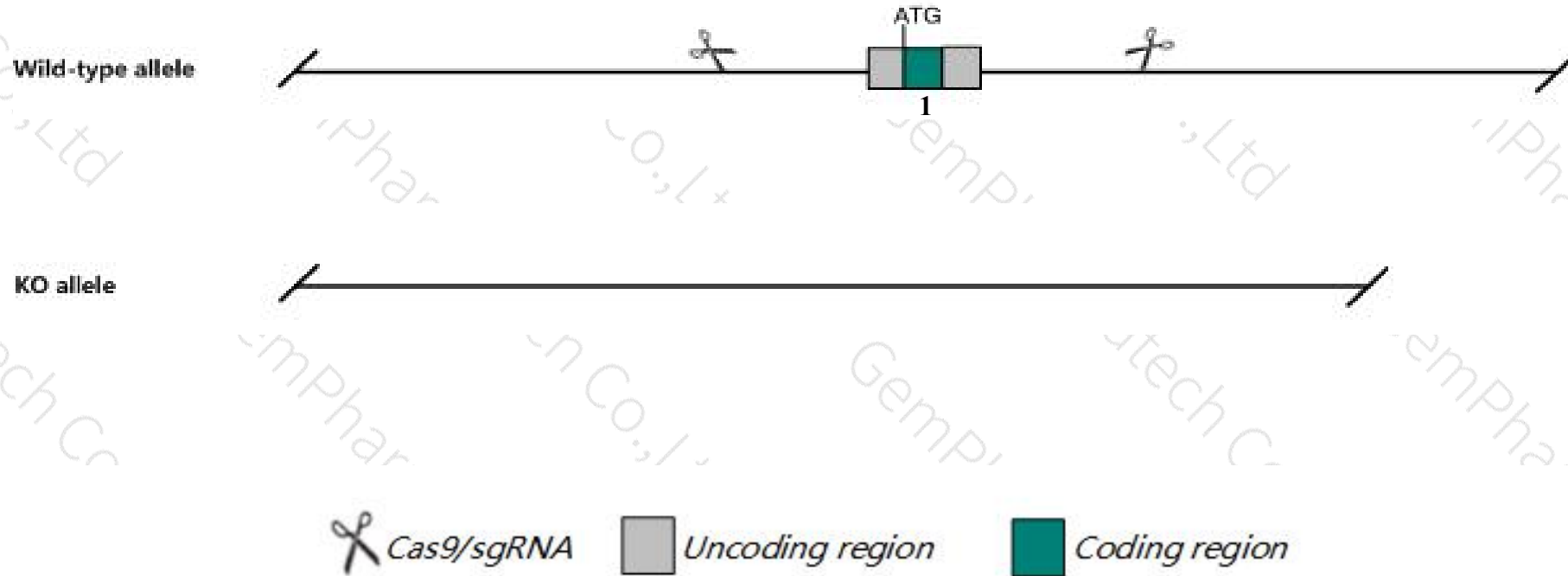
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR-Cas9 technology to edit the *Gpr31b* gene. The schematic diagram is as follows:



- The *Gpr31b* gene has 1 transcript. According to the structure of *Gpr31b* gene, exon1 of *Gpr31b-201* (ENSMUST00000091648.3) 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 *Gpr31b* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 sequence of this gene is not specific, and the gene identification stage needs to refer to the identification protocol.
(该基因的序列非常不特异, 基因鉴定阶段需参照鉴定protocol执行)
- The *Gpr31b* gene is located on the Chr17. 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)

Gpr31b G protein-coupled receptor 31, D17Leh66b region [Mus musculus (house mouse)]

Gene ID: 436440, updated on 21-Feb-2019

Summary



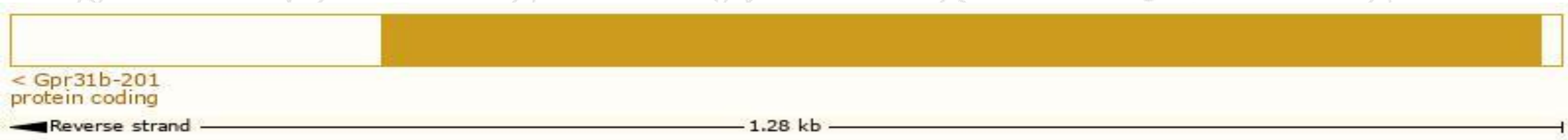
Official Symbol	Gpr31b provided by MGI
Official Full Name	G protein-coupled receptor 31, D17Leh66b region provided by MGI
Primary source	MGI:MGI:1354372
See related	Ensembl:ENSMUSG00000071311
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	12-HETER, GPR31c(t), Gpr31, Gpr31c
Orthologs	human all

Transcript information (Ensembl)

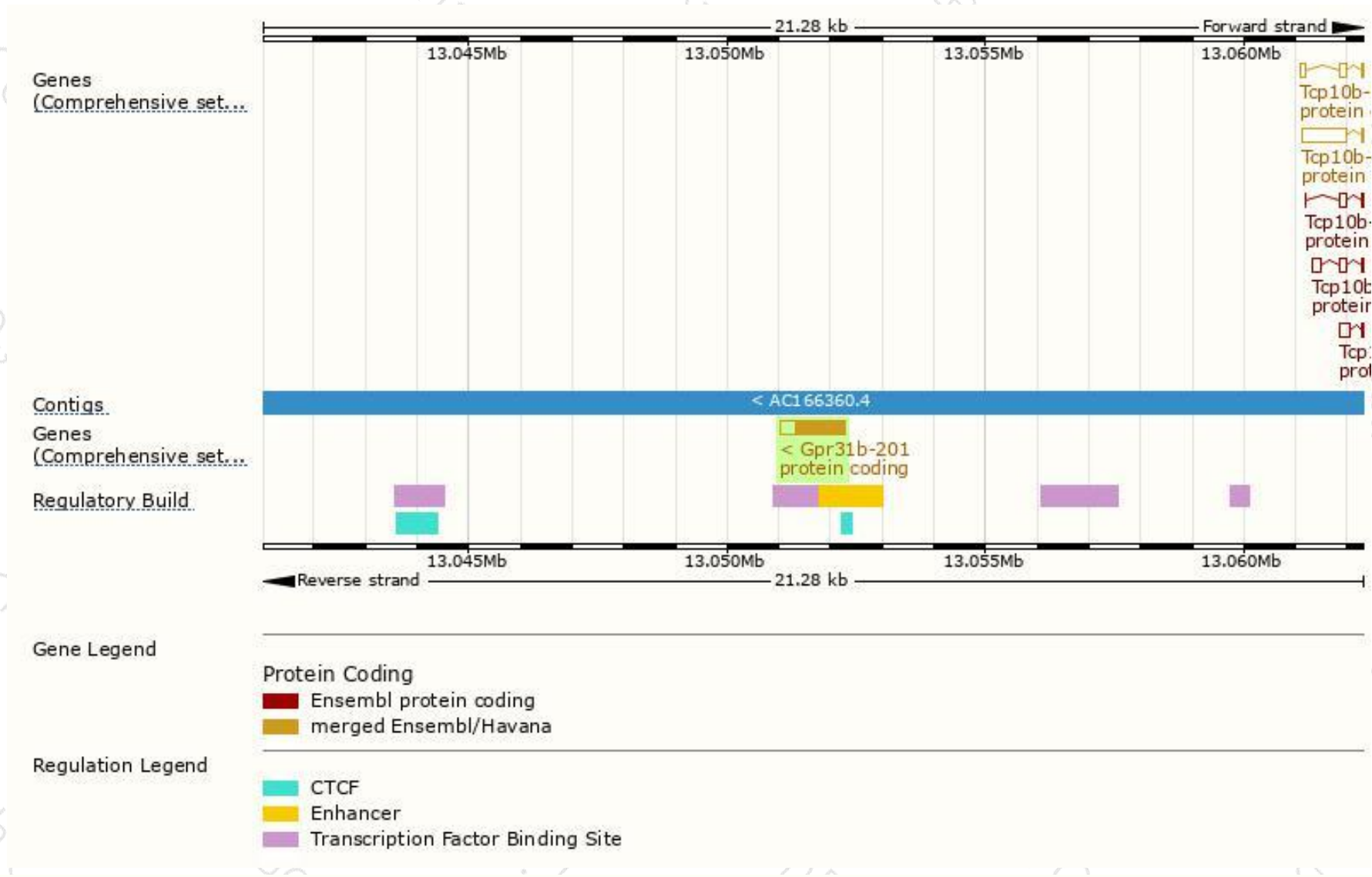
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gpr31b-201	ENSMUST00000091648.3	1283	319aa	Protein coding	CCDS37438	F8VQN3	TSL:NA GENCODE basic APPRIS P1

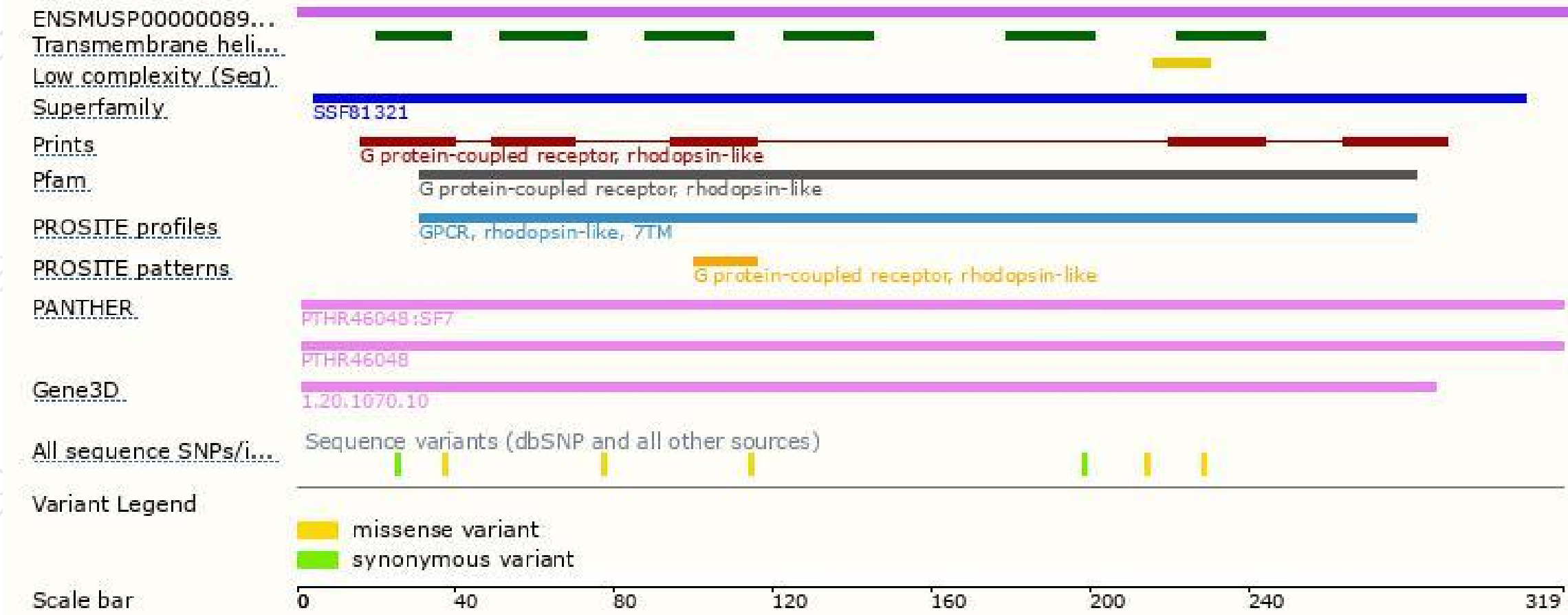
The strategy is based on the design of *Gpr31b-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

