

Gmps Cas9-KO Strategy

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Project Overview

Project Name

Gmps

Project type

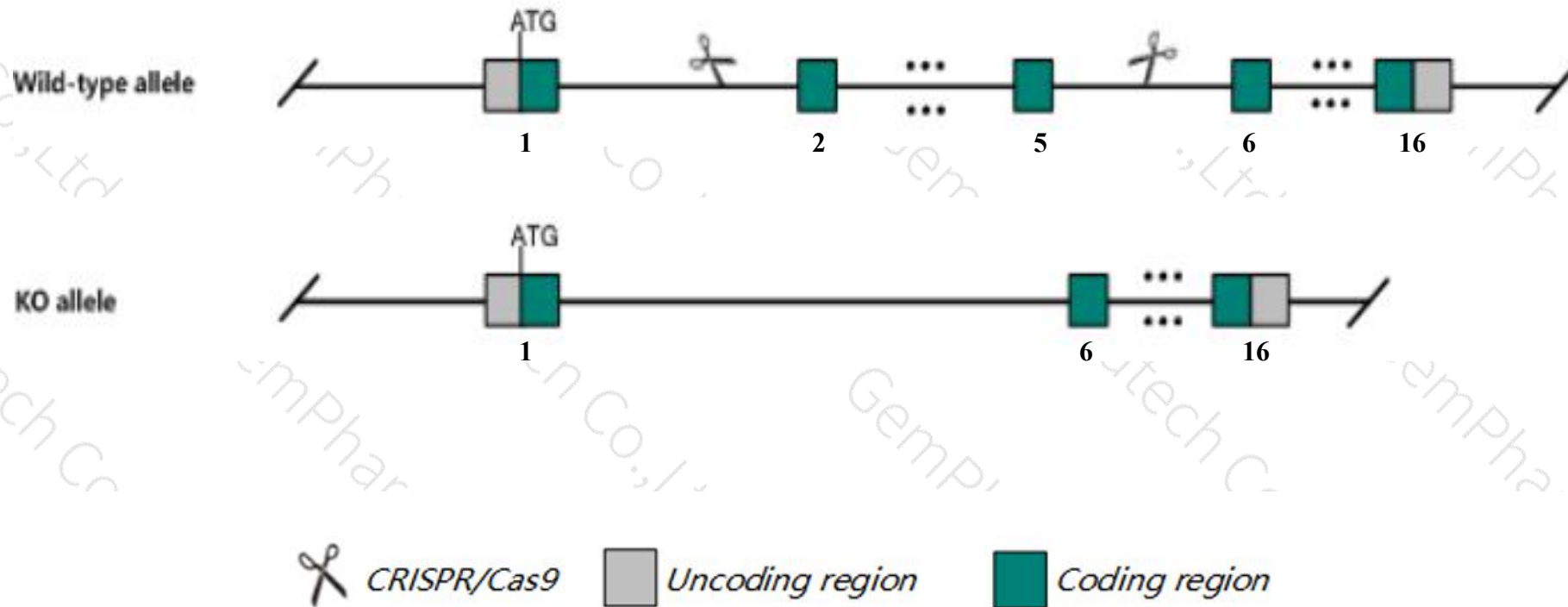
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Gmps* gene has 1 transcript. According to the structure of *Gmps* gene, exon2-exon5 of *Gmps*-201(ENSMUST00000029405.7) transcript is recommended as the knockout region. The region contains 499bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gmps* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Gmps* gene is located on the Chr3. 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)

Gmps guanine monophosphate synthetase [Mus musculus (house mouse)]

Gene ID: 229363, updated on 13-Mar-2020

Summary



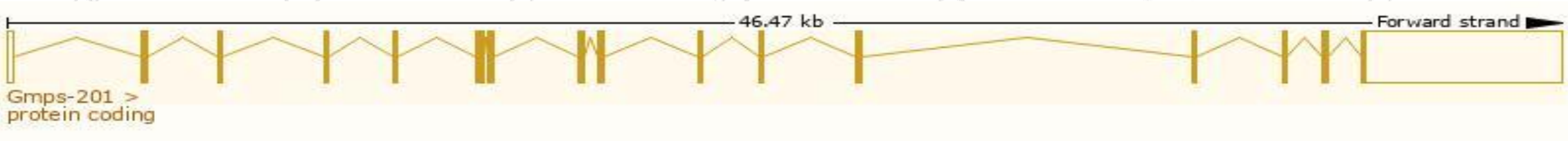
Official Symbol	Gmps provided by MGI
Official Full Name	guanine monophosphate synthetase provided by MGI
Primary source	MGI:MGI:2448526
See related	Ensembl:ENSMUSG00000027823
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	670032, AA591640, AI047208, Gm9479
Expression	Ubiquitous expression in CNS E11.5 (RPKM 11.1), testis adult (RPKM 10.5) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

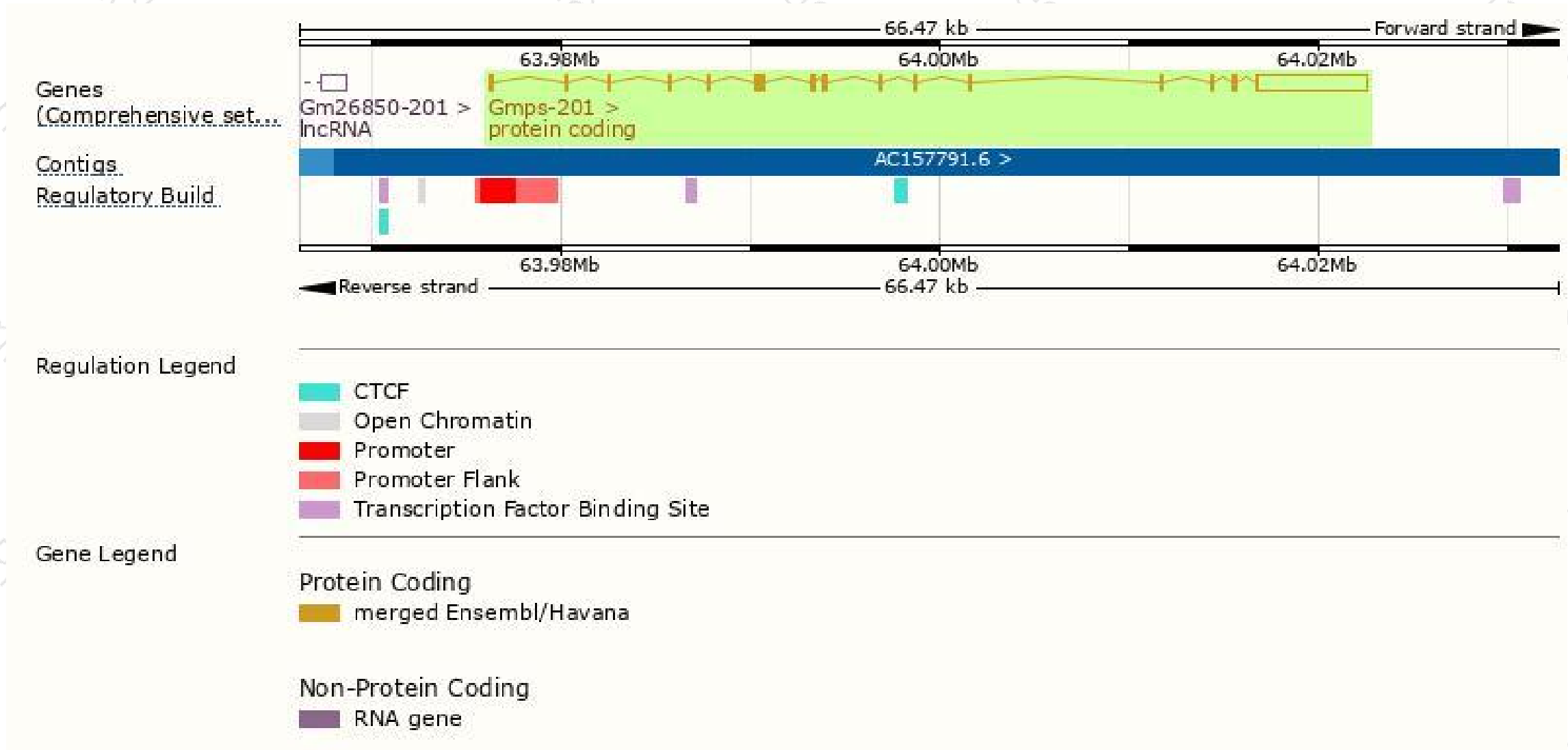
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gmps-201	ENSMUST00000029405.7	8105	693aa	Protein coding	CCDS17383	B2RRH9 Q3THK7	TSL:1 GENCODE basic APPRIS P1

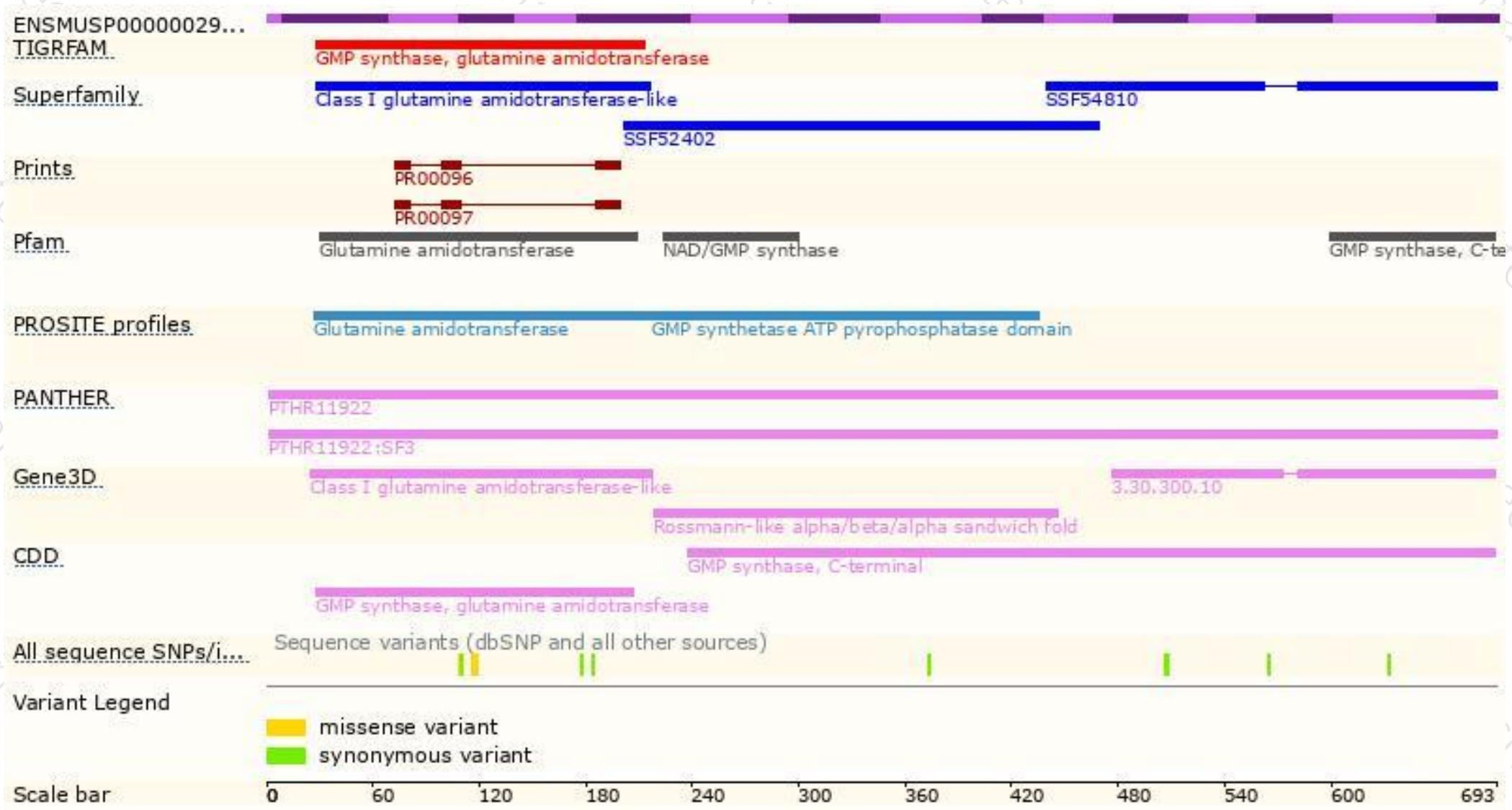
The strategy is based on the design of *Gmps-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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