Zfp469 Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Xueting Zhang

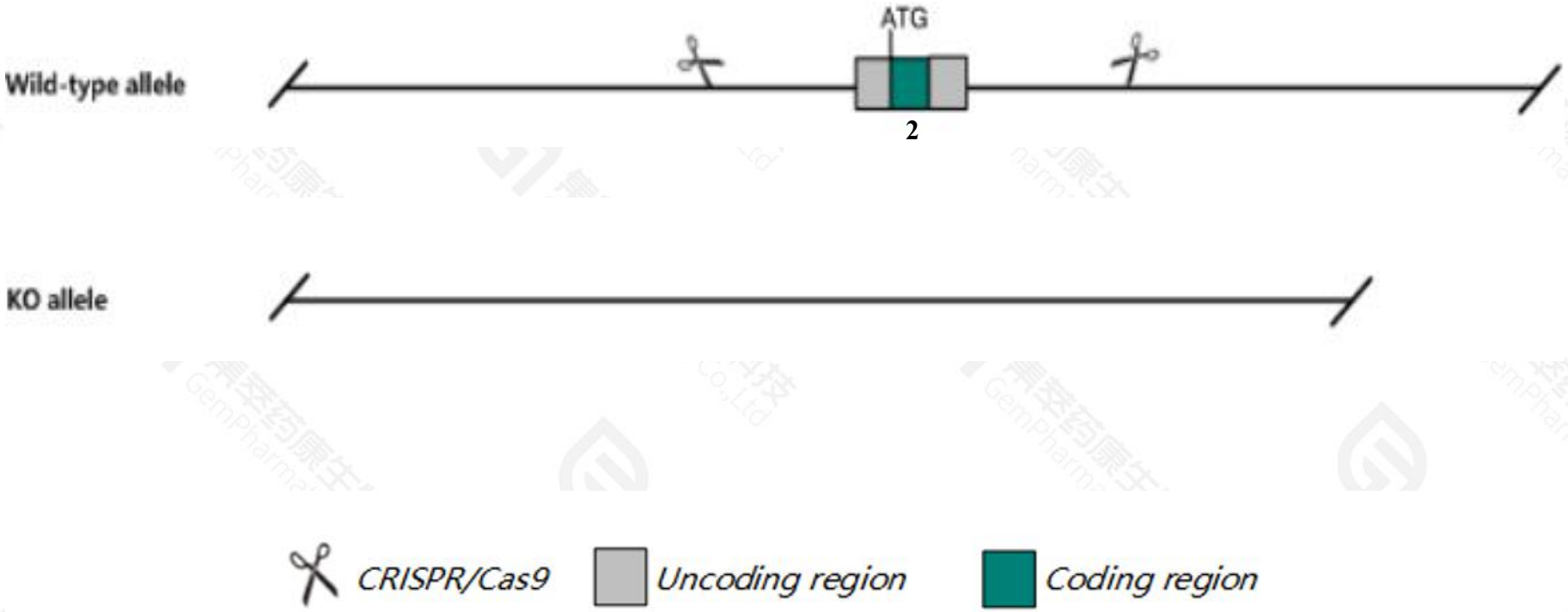
Design Date: 2021-2-8

Project Overview

Project Name	***Zfp469***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp469* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zfp469* gene has 2 transcripts. According to the structure of *Zfp469* gene, exon2 of *Zfp469-202*(ENSMUST00000187142.2) 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 *Zfp469* 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.

Notice

➢ The KO region contains partial intron of the *Galnt2l* gene.Knockout the region may affect the function of *Galnt2l* gene.

➢ The *Zfp469* gene is located on the Chr8. 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）

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Zfp469 zinc finger protein 469 [Mus musculus (house mouse)]

Gene ID: 195209, updated on 13-Mar-2020

Summary

Official Symbol	Zfp469 provided by MGI
Official Full Name	zinc finger protein 469 provided byMGI
Primary source	MGI:MGI:2684868
See related	Ensembl:ENSMUSG00000043903
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	Gm22
Expression	Broad expression in ovary adult (RPKM 1.6), limb E14.5 (RPKM 1.6) and 19 other tissuesSee more
Orthologs	human all

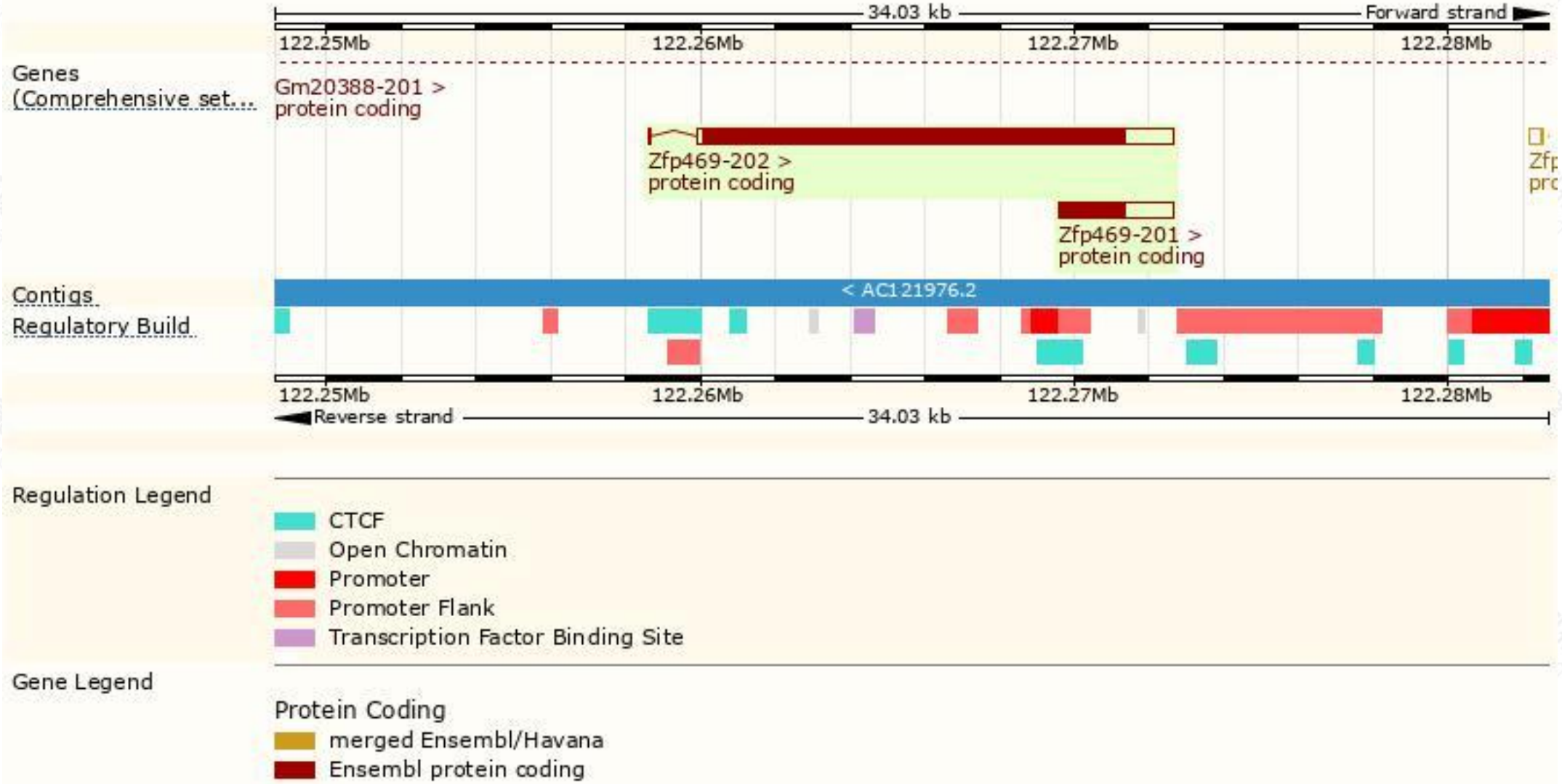
Transcript information（Ensembl）

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

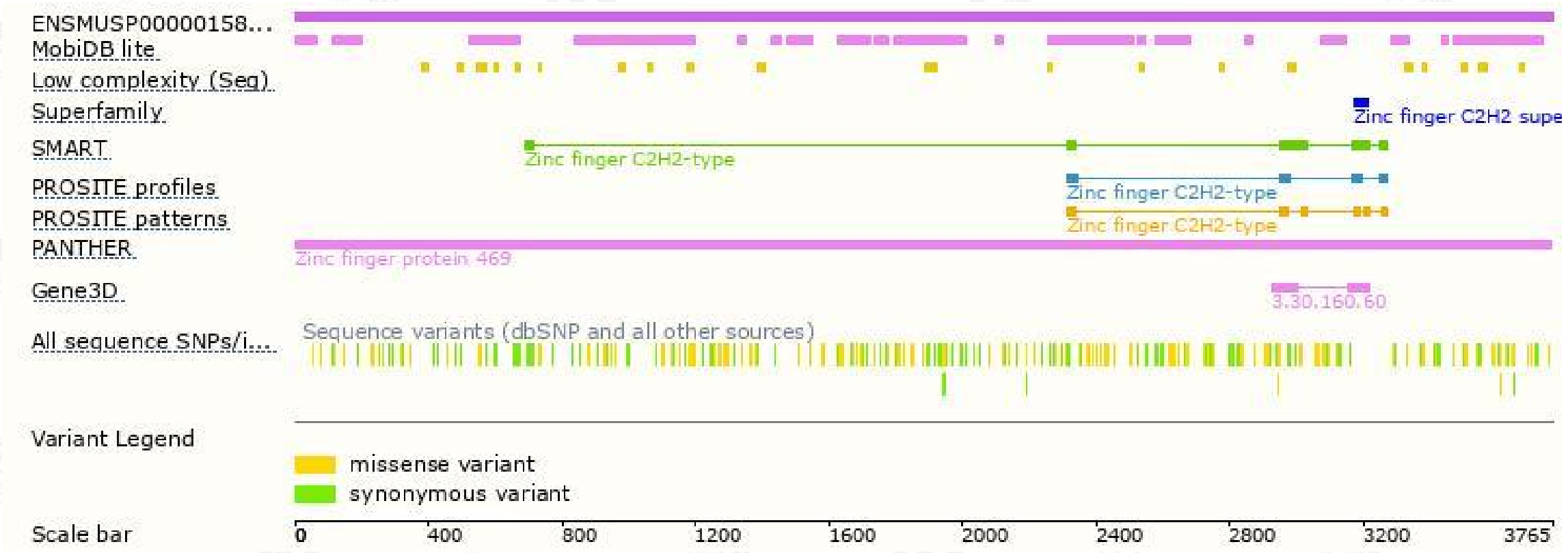
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp469-202	ENSMUST00000187142.2	12777	3765aa	Protein coding	-		TSL:NA GENCODE basic APPRIS P1
Zfp469-201	ENSMUST00000055537.2	3078	597aa	Protein coding	-		TSL:NA GENCODE basic

The strategy is based on the design of *Zfp469-202* transcript,the transcription is shown below:

Genomic location distribution



Protein domain



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

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