

***Zfp541* Cas9-KO Strategy**

Designer: Daohua Xu

Reviewer: Xueting Zhang

Design Date: 2021-2-7

Project Overview

Project Name

Zfp541

Project type

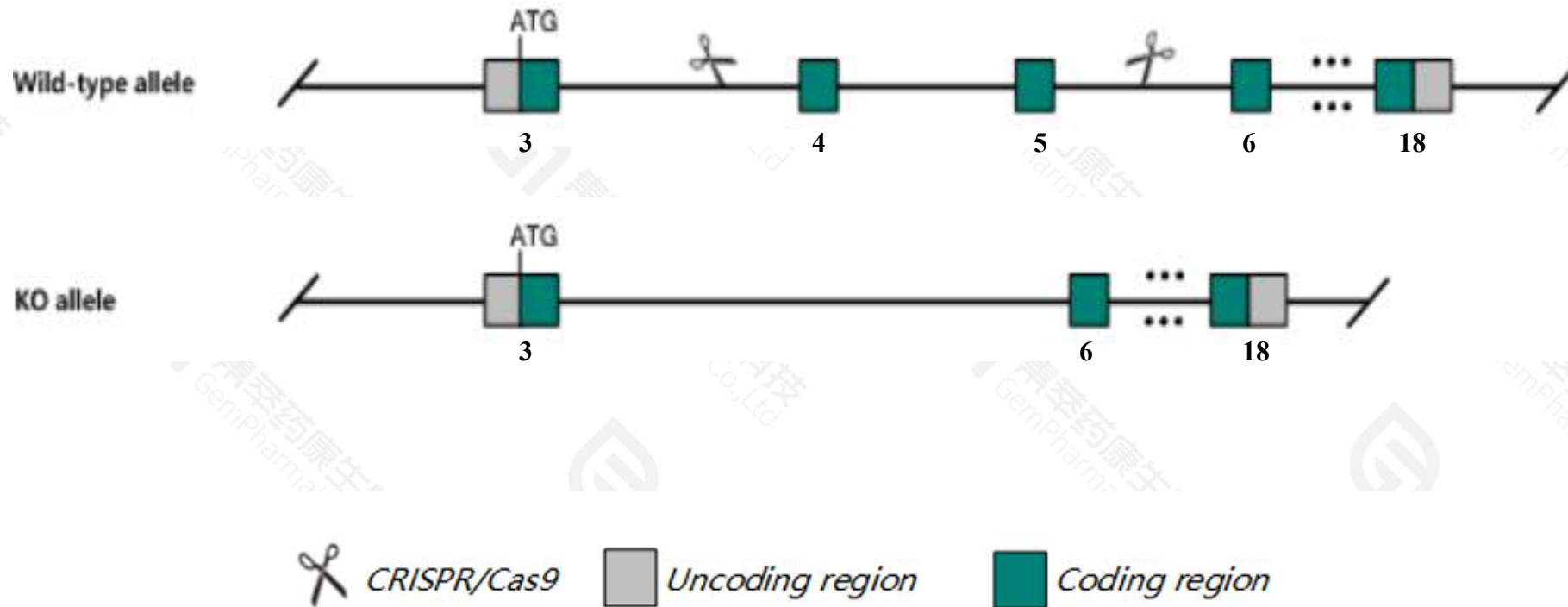
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp541* gene. The schematic diagram is as follows:



- The *Zfp541* gene has 3 transcripts. According to the structure of *Zfp541* gene, exon4-exon5 of *Zfp541*-202(ENSMUST00000209369.1) transcript is recommended as the knockout region. The region contains 2096bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp541* 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 *Zfp541* gene is located on the Chr7. 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)

Zfp541 zinc finger protein 541 [Mus musculus (house mouse)]

Gene ID: 666528, updated on 13-Mar-2020

Summary



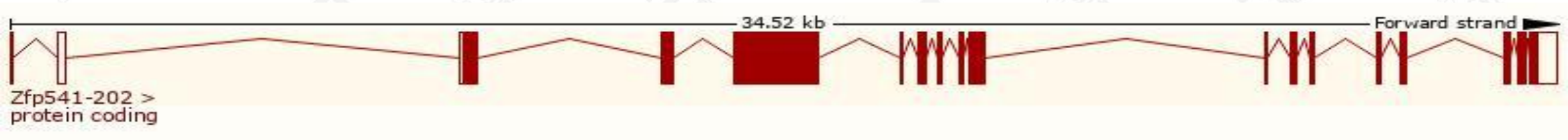
Official Symbol	Zfp541 provided by MGI
Official Full Name	zinc finger protein 541 provided by MGI
Primary source	MGI:MGI:3647699
See related	Ensembl:ENSMUSG00000078796
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	EG666528, Znf541
Expression	Restricted expression toward testis adult (RPKM 39.9) See more
Orthologs	human all

Transcript information (Ensembl)

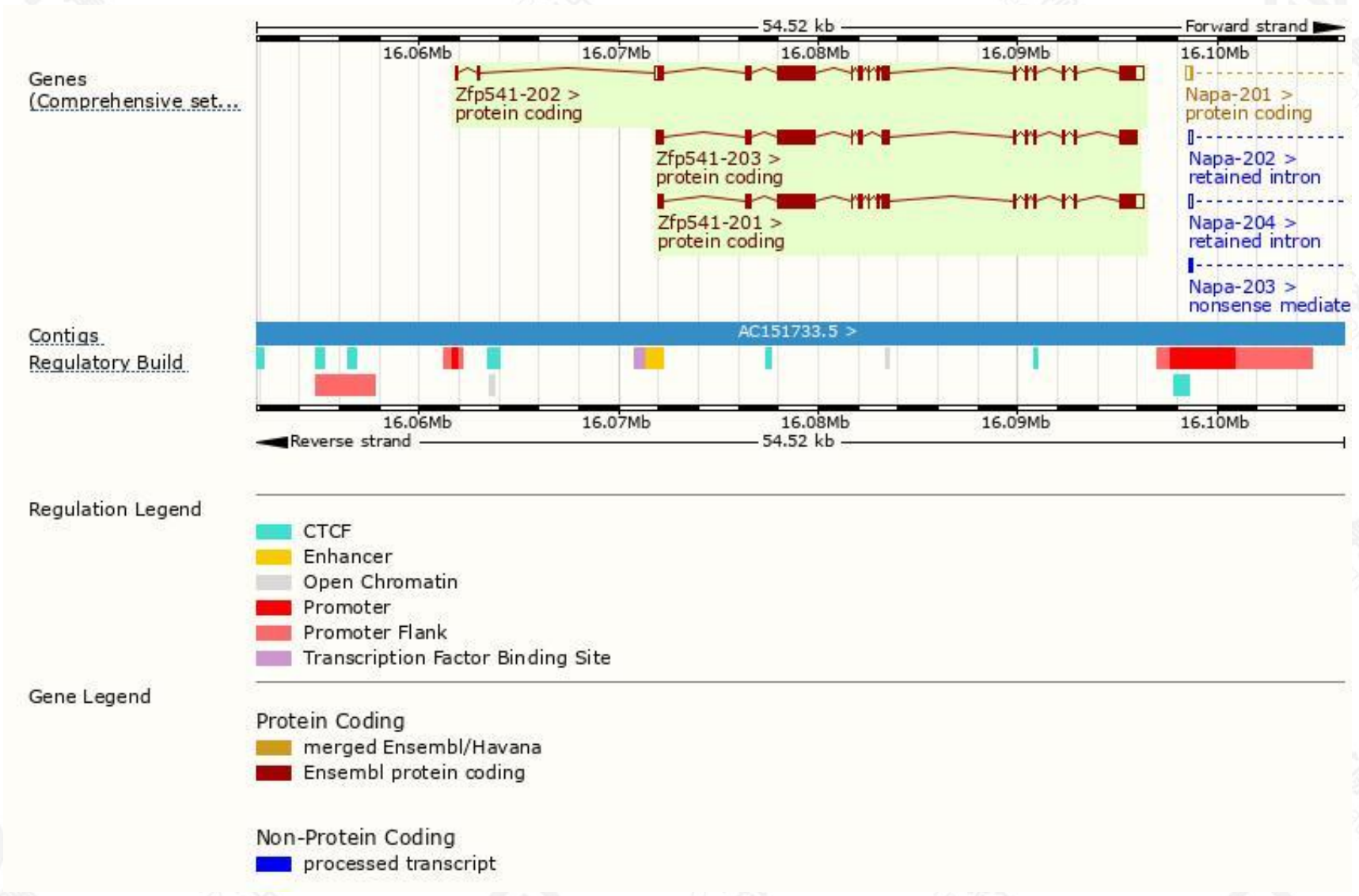
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp541-202	ENSMUST00000209369.1	4879	1363aa	Protein coding	CCDS39781	Q0GGX2	TSL:5 GENCODE basic APPRIS P2
Zfp541-201	ENSMUST00000108509.1	4561	1363aa	Protein coding	CCDS39781	Q0GGX2	TSL:1 GENCODE basic APPRIS P2
Zfp541-203	ENSMUST00000210805.1	4084	1302aa	Protein coding	-	Q0GGX2	TSL:1 GENCODE basic APPRIS ALT2

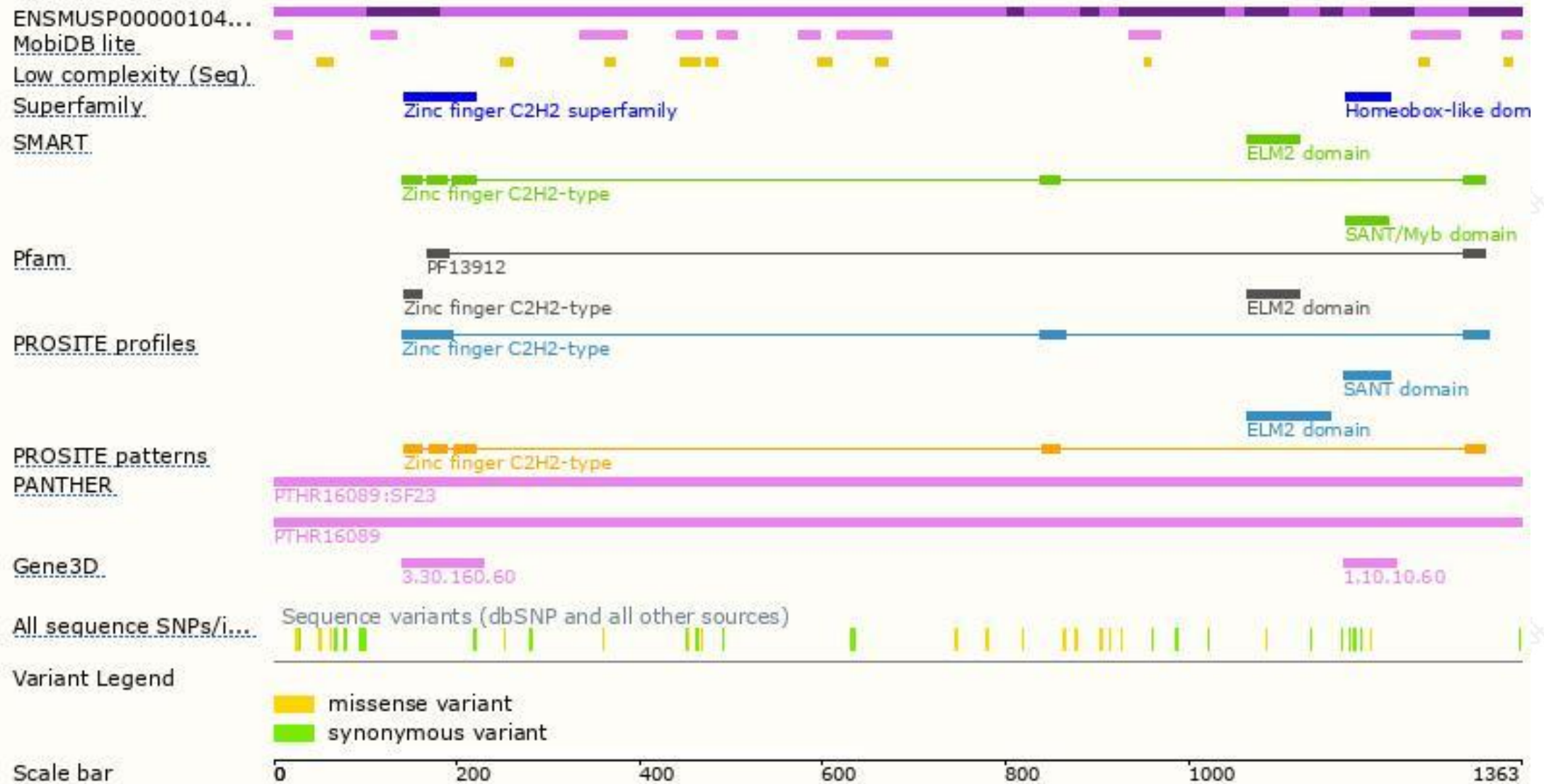
The strategy is based on the design of *Zfp541-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

