Zfp711 Cas9-KO Strategy

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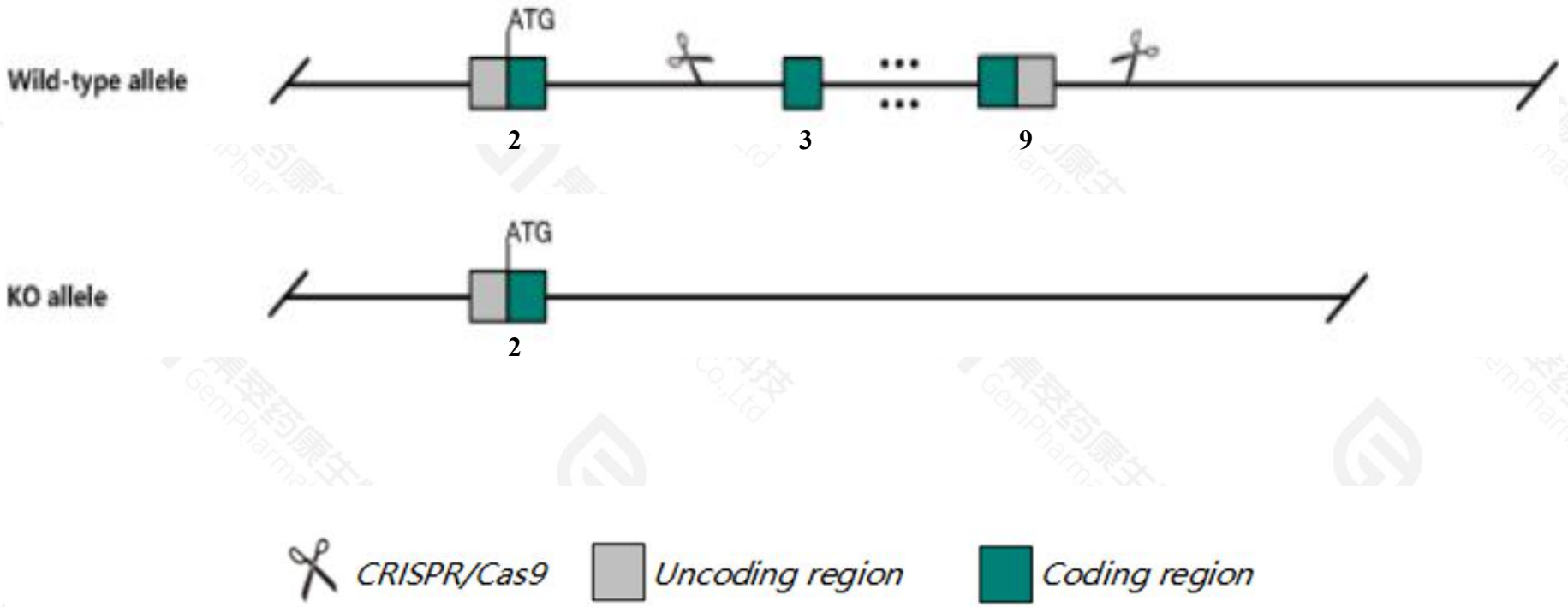
Project Overview

Project Name	***Zfp711***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp711* gene. The schematic diagram is as follows:



Technical routes

➢ The *Zfp711* gene has 4 transcripts. According to the structure of *Zfp711* gene, exon3-exon9 of *Zfp711-202*(ENSMUST00000113409.8) transcript is recommended as the knockout region.The region contains 2339bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Zfp711* 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 *Zfp711* gene is located on the ChrX. 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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Zfp711 zinc finger protein 711 [Mus musculus (house mouse)]

Gene ID: 245595, updated on 17-Feb-2021

Summary

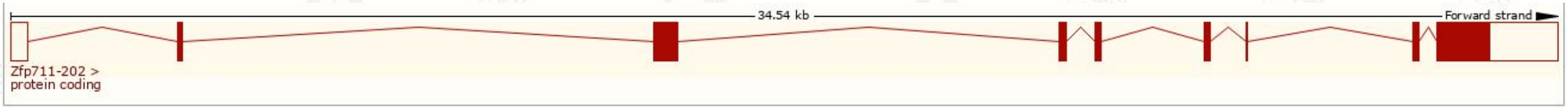
Official Symbol	Zfp711 provided by MGI
Official Full Name	zinc finger protein 711 provided byMGI
Primary source	MGI:MGI:3045342
See related	Ensembl:ENSMUSG00000025529
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810409C01Rik, A230078I01Rik, Znf711
Expression	Biased expression in CNS E18 (RPKM 8.3), CNS E14 (RPKM 7.5) and 9 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

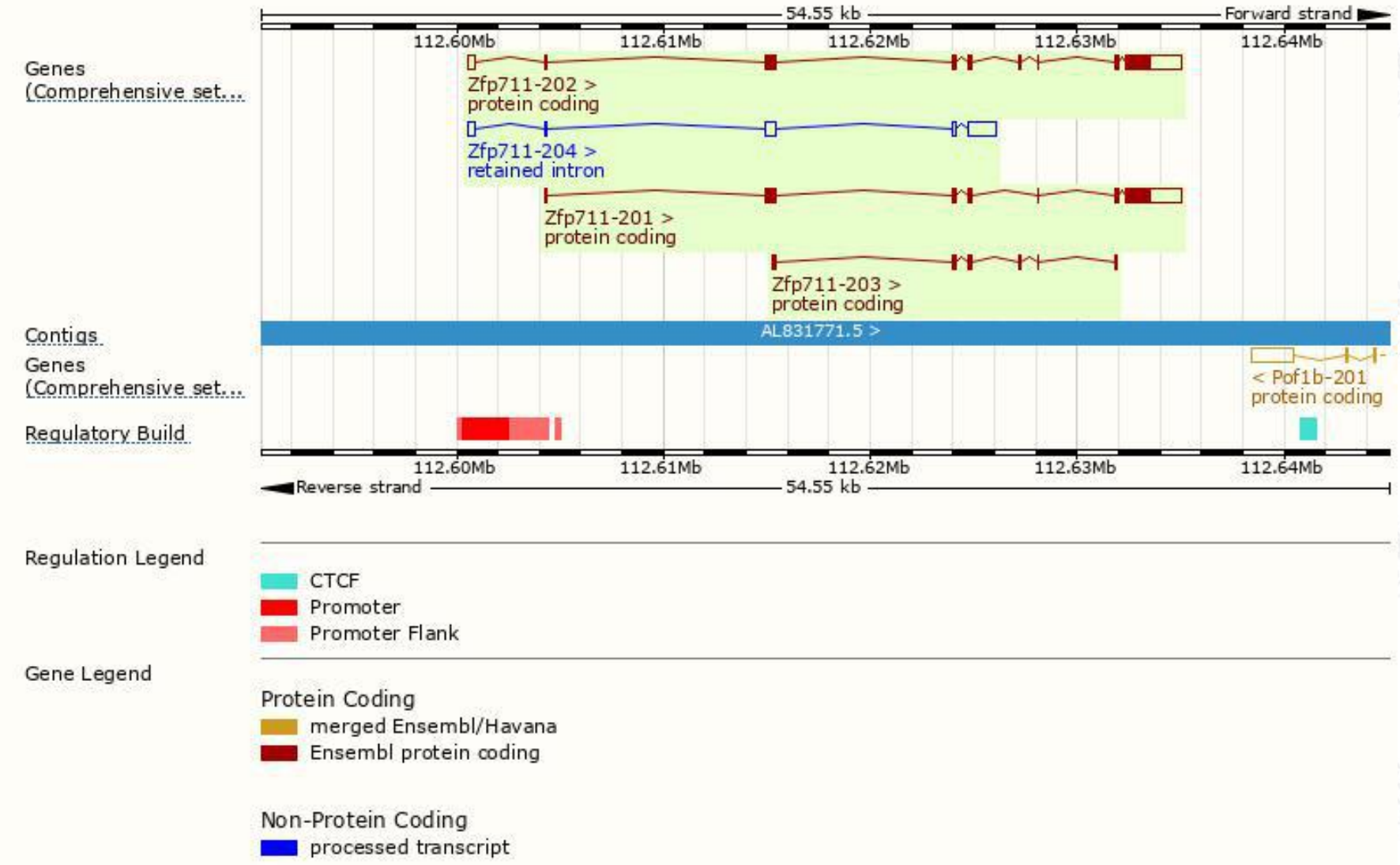
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp711-202	ENSMUST00000113409.8	4330	805aa	Protein coding	CCDS41106		TSL:5 , GENCODE basic , APPRIS P2 ,
Zfp711-201	ENSMUST00000071814.13	3817	760aa	Protein coding	-		TSL:5 , GENCODE basic , APPRIS ALT1 ,
Zfp711-203	ENSMUST00000122805.2	694	231aa	Protein coding	-		CDS 5' and 3' incomplete , TSL:3 ,
Zfp711-204	ENSMUST00000151972.7	2519	No protein	Retained intron	-		TSL:1 ,

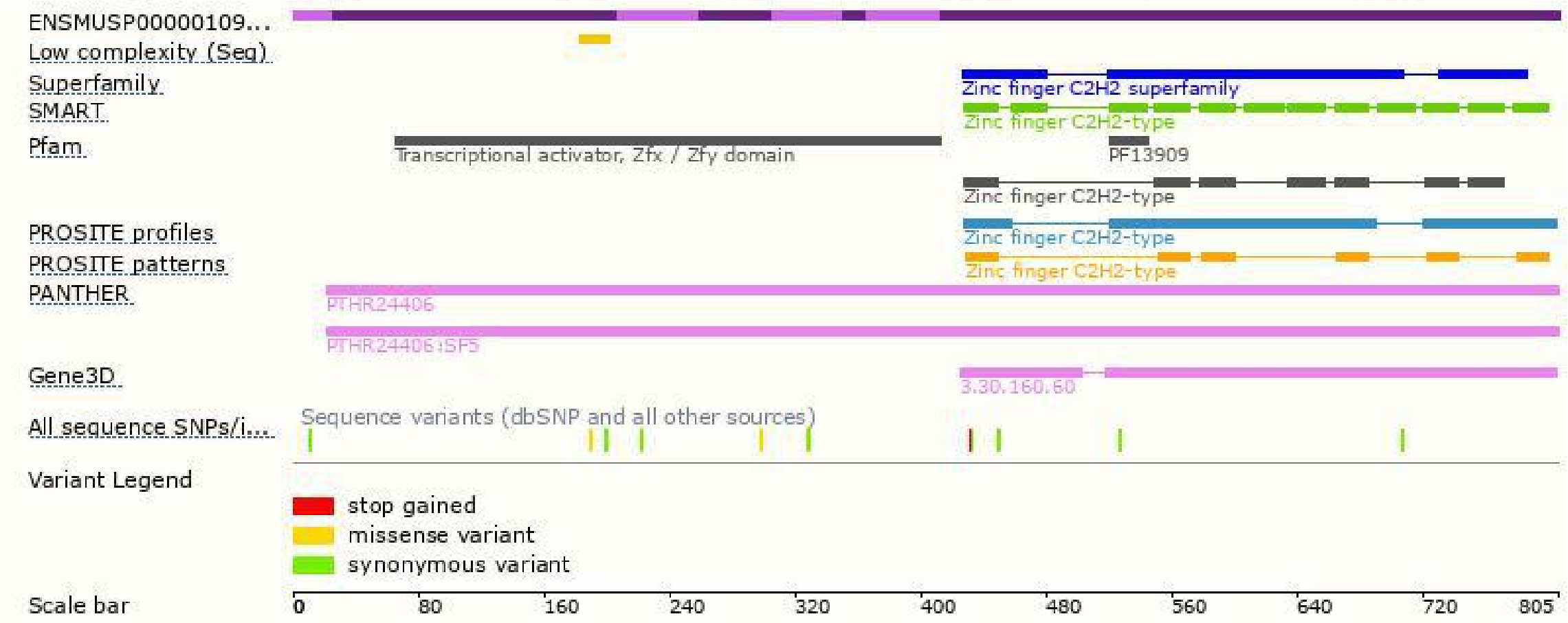
The strategy is based on the design of *Zfp711-202* transcript,the transcription is shown below:



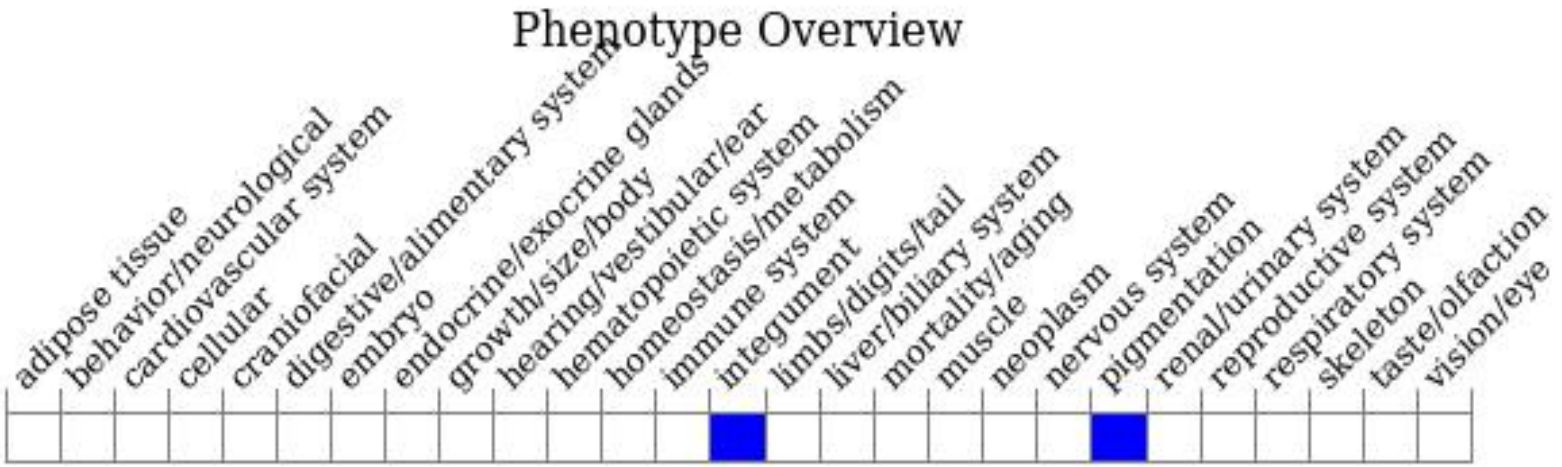
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

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