

***Zmat1* Cas9-KO Strategy**

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Project Overview

Project Name

Zmat1

Project type

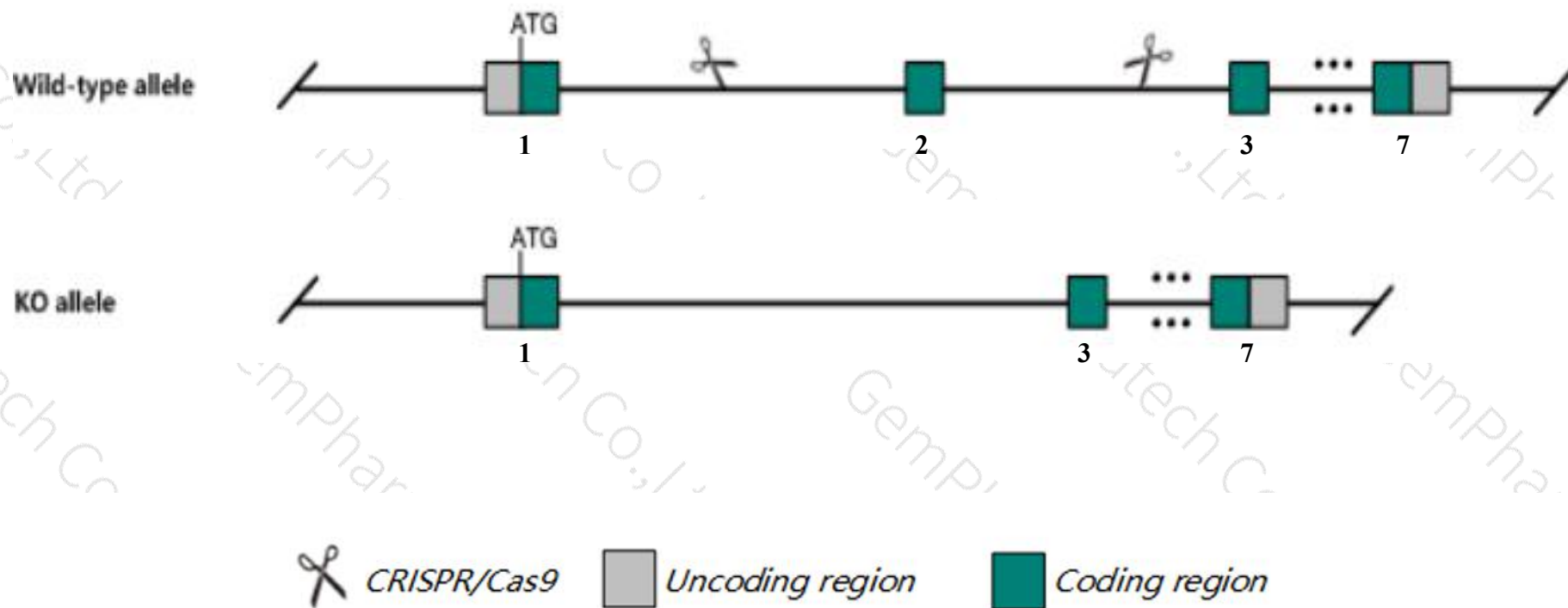
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zmat1* gene. The schematic diagram is as follows:



- The *Zmat1* gene has 4 transcripts. According to the structure of *Zmat1* gene, exon2 of *Zmat1*-201(ENSMUST00000064659.5) transcript is recommended as the knockout region. The region contains 107bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zmat1* 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 *Zmat1* 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)

Zmat1 zinc finger, matrin type 1 [Mus musculus (house mouse)]

Gene ID: 215693, updated on 13-Mar-2020

Summary



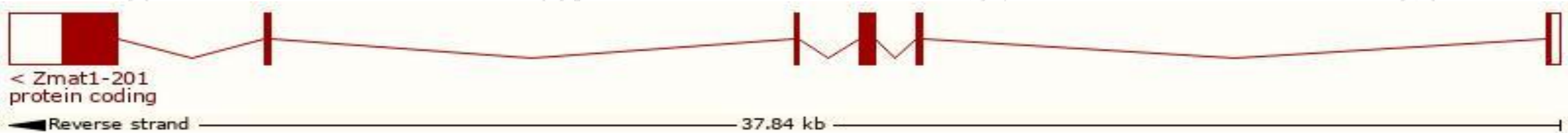
Official Symbol	Zmat1 provided by MGI
Official Full Name	zinc finger, matrin type 1 provided by MGI
Primary source	MGI:MGI:2442284
See related	Ensembl:ENSMUSG000000052676
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A230096A06, AW990744, B930008K04Rik
Expression	Ubiquitous expression in frontal lobe adult (RPKM 2.0), cerebellum adult (RPKM 1.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

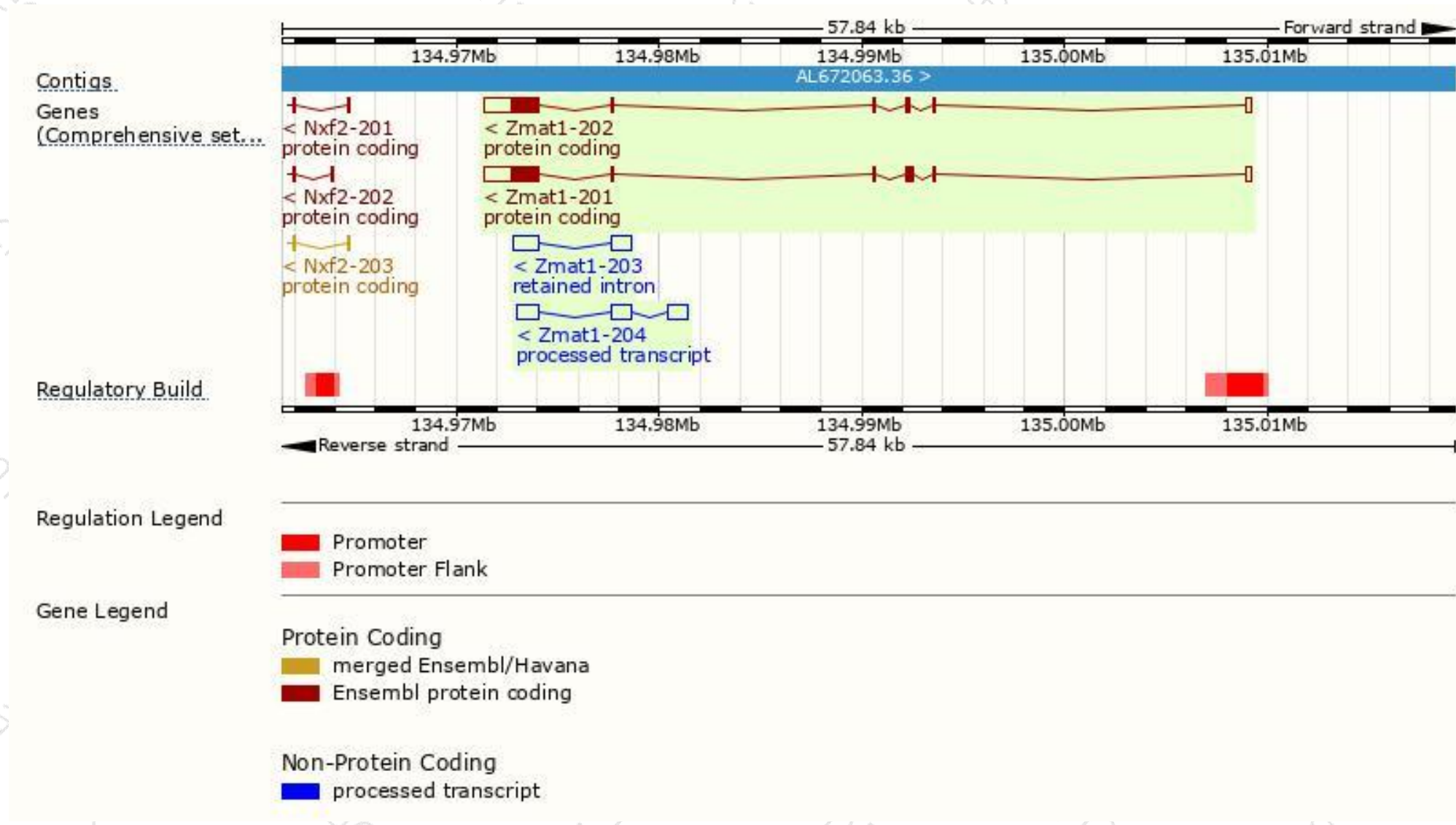
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zmat1-201	ENSMUST00000064659.5	3501	647aa	Protein coding	CCDS41126	G5E8E4	TSL:1 GENCODE basic APPRIS P1
Zmat1-202	ENSMUST00000113185.8	3378	613aa	Protein coding	-	Z4YL92	TSL:5 GENCODE basic
Zmat1-204	ENSMUST00000151252.1	3038	No protein	Processed transcript	-	-	TSL:5
Zmat1-203	ENSMUST00000141849.1	2231	No protein	Retained intron	-	-	TSL:1

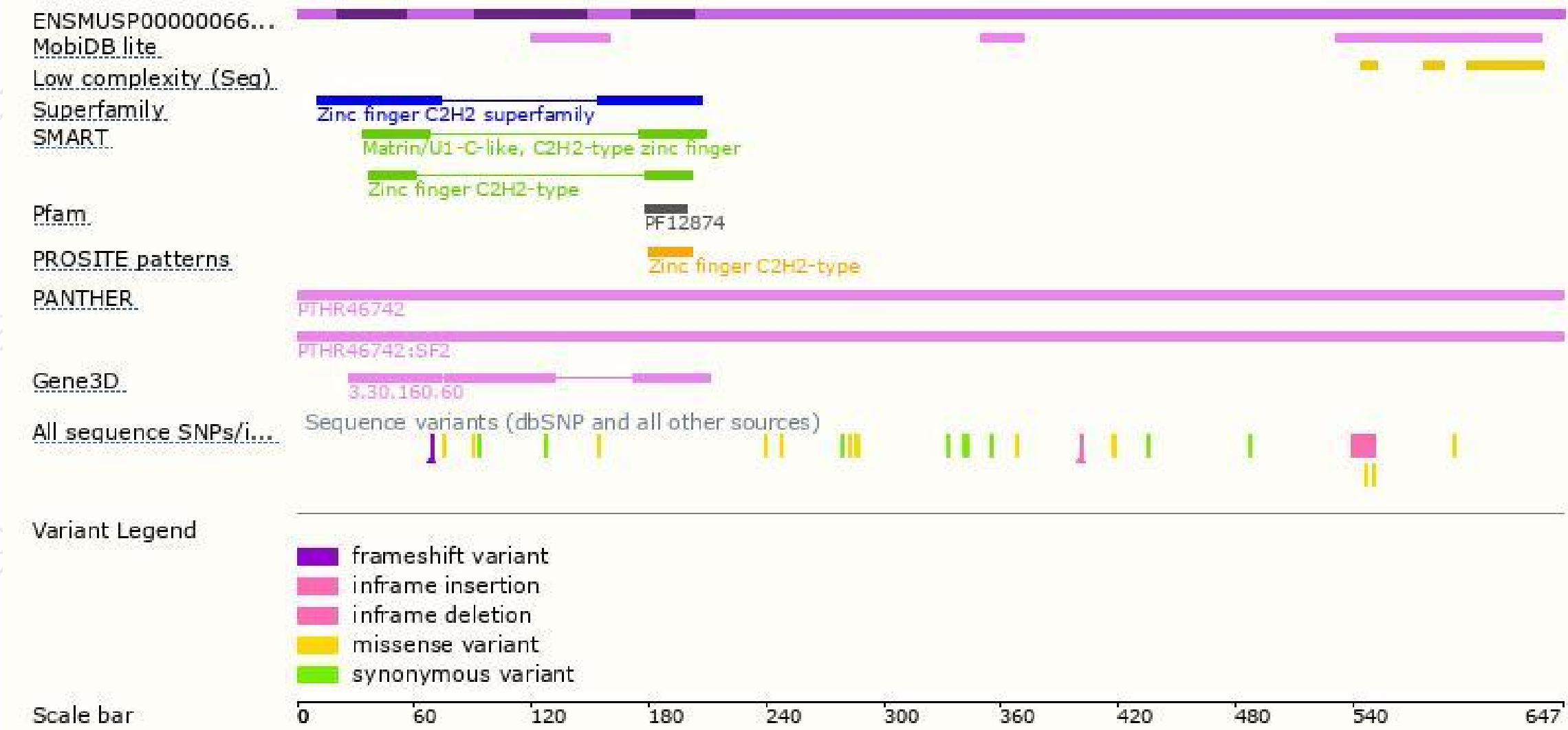
The strategy is based on the design of *Zmat1-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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