

***Zmat2* Cas9-KO Strategy**

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Project Overview

Project Name

Zmat2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zmat2* gene. The schematic diagram is as follows:



- The *Zmat2* gene has 2 transcripts. According to the structure of *Zmat2* gene, exon3 of *Zmat2*-201(ENSMUST00000001419.9) transcript is recommended as the knockout region. The region contains 124bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zmat2* 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 *Zmat2* gene is located on the Chr18. 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.
- Transcript *Zmat2*-202 may not be affected.
- 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)

Zmat2 zinc finger, matrin type 2 [Mus musculus (house mouse)]

Gene ID: 66492, updated on 13-Mar-2020

Summary



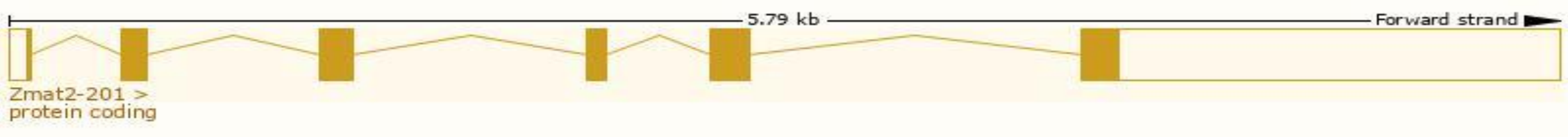
Official Symbol	Zmat2 provided by MGI
Official Full Name	zinc finger, matrin type 2 provided by MGI
Primary source	MGI:MGI:1913742
See related	Ensembl:ENSMUSG000000001383
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610510D14Rik, 2900082I05Rik
Expression	Ubiquitous expression in cortex adult (RPKM 33.8), frontal lobe adult (RPKM 32.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

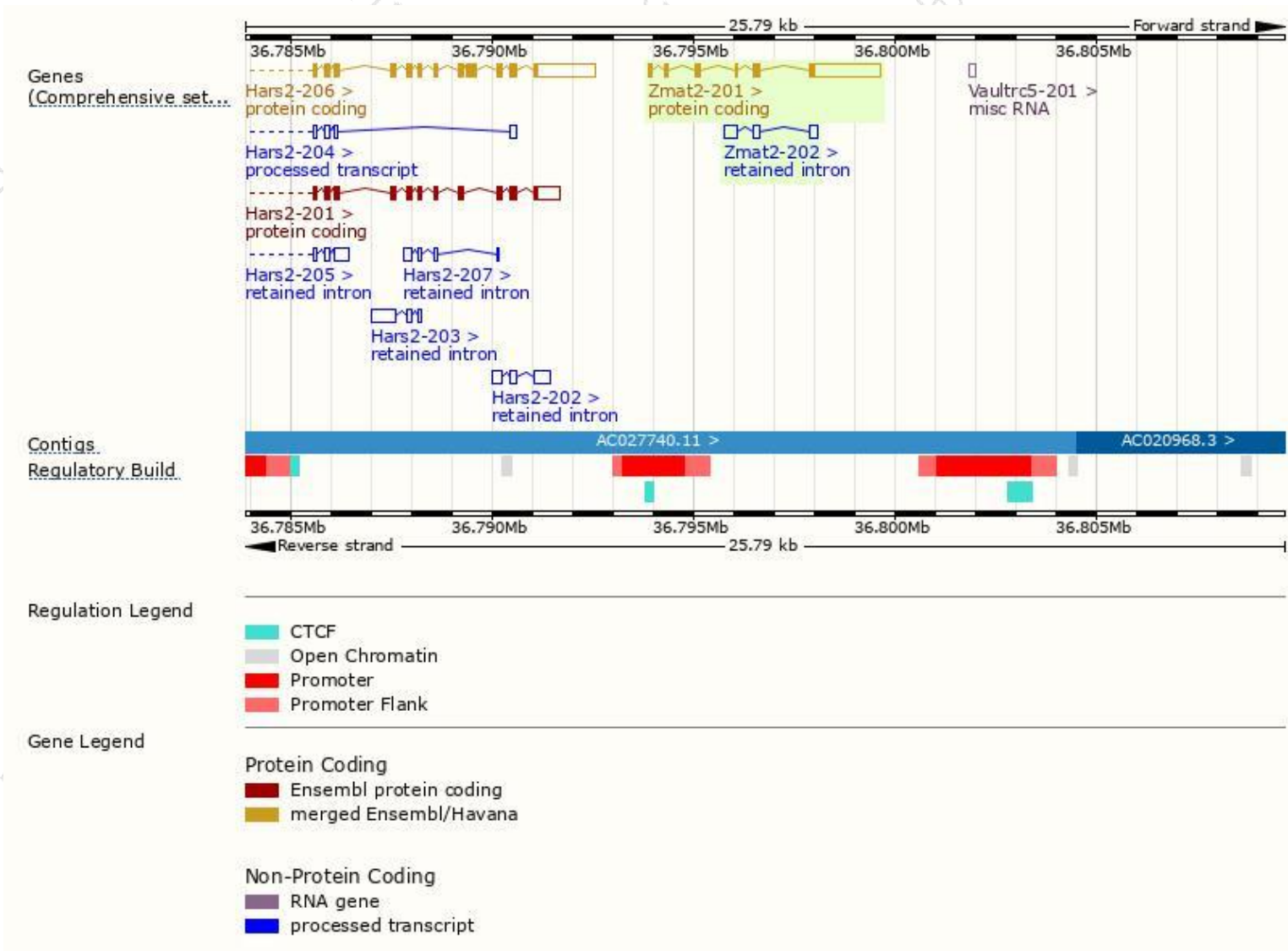
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zmat2-201	ENSMUST00000001419.9	2310	199aa	Protein coding	CCDS37773	Q9CPW7	TSL:1 GENCODE basic APPRIS P1
Zmat2-202	ENSMUST00000235399.1	707	No protein	Retained intron	-	-	

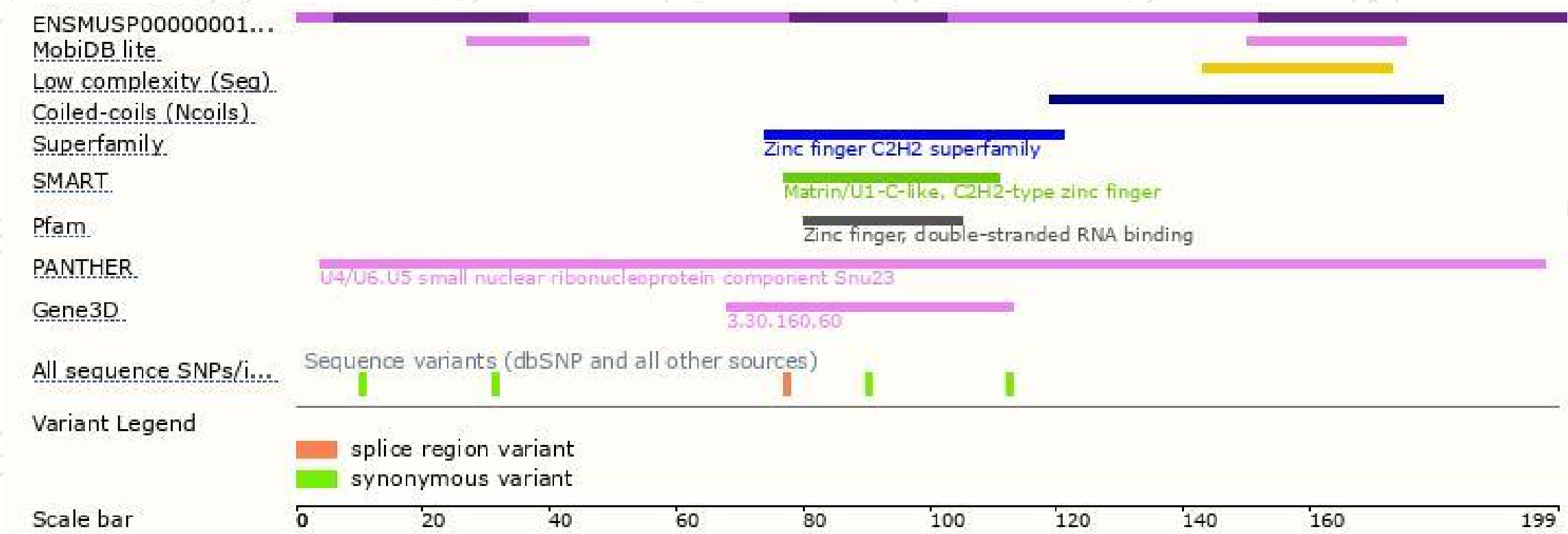
The strategy is based on the design of *Zmat2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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