

***Zmym6* Cas9-CKO Strategy**

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Project Overview

Project Name

Zmym6

Project type

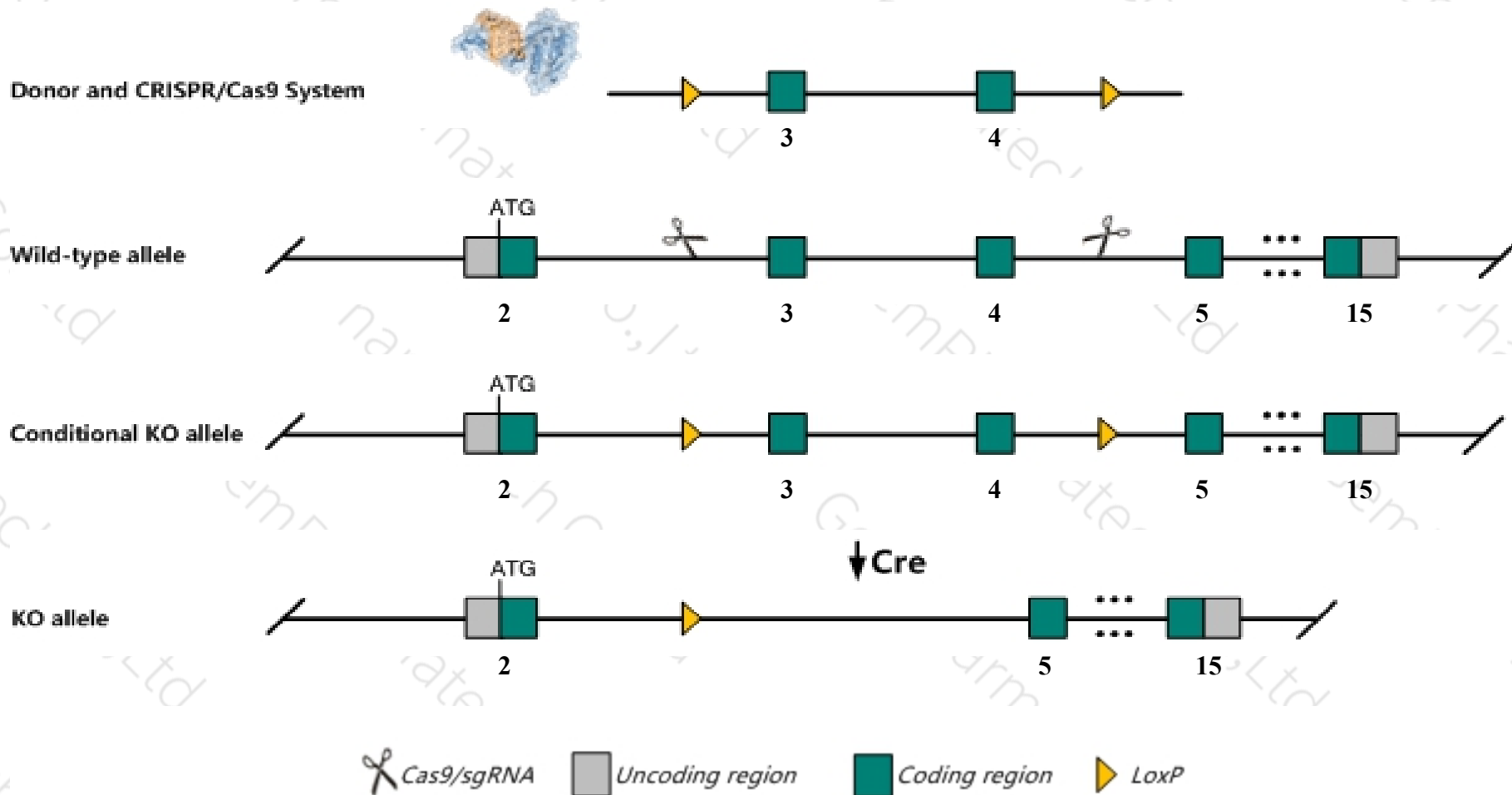
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zmym6* gene. The schematic diagram is as follows:



Technical routes

- The *Zmym6* gene has 6 transcripts. According to the structure of *Zmym6* gene, exon3-exon4 of *Zmym6*-201(ENSMUST00000046751.12) transcript is recommended as the knockout region. The region contains 293bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zmym6* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Zmym6* gene is located on the Chr4. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Zmym6 zinc finger, MYM-type 6 [Mus musculus (house mouse)]

Gene ID: 100177, updated on 13-Mar-2020

Summary



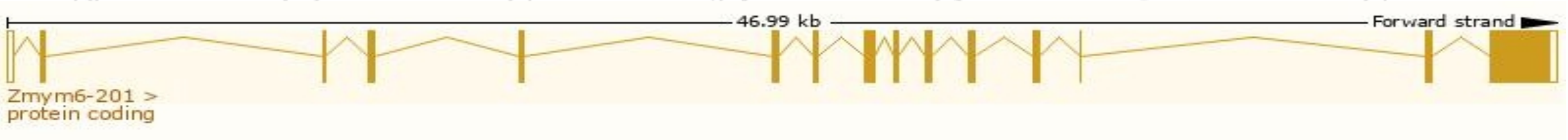
Official Symbol	Zmym6 provided by MGI
Official Full Name	zinc finger, MYM-type 6 provided by MGI
Primary source	MGI:MGI:106505
See related	Ensembl:ENSMUSG00000042408
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9330177P20Rik, AI593204, AI661340, D4Wsu24e, Zfp258
Expression	Broad expression in CNS E18 (RPKM 13.5), CNS E14 (RPKM 11.4) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

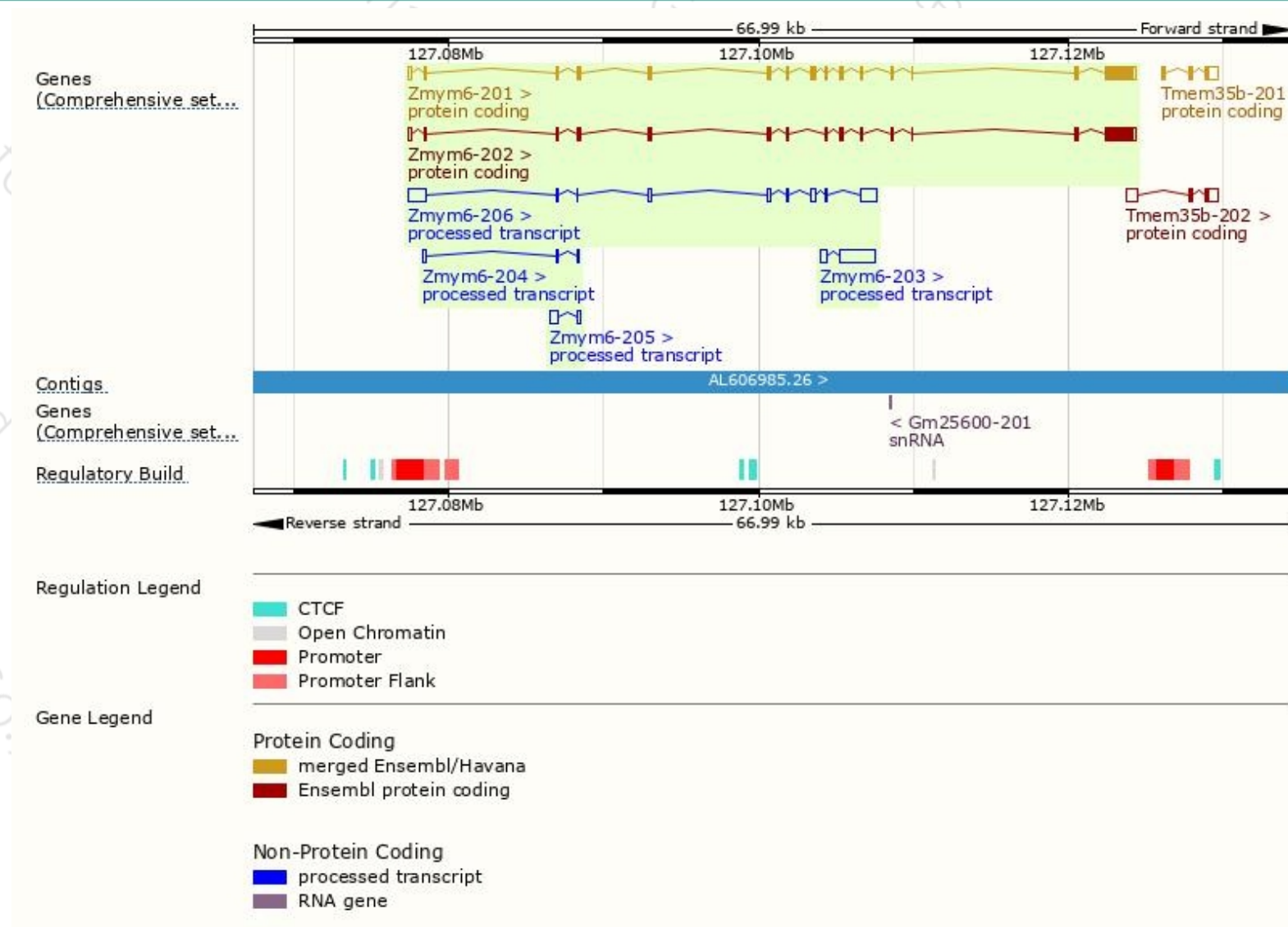
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zmym6-201	ENSMUST00000046751.12	4210	1249aa	Protein coding	CCDS18664	Q8BS54	TSL:1 GENCODE basic APPRIS P1
Zmym6-202	ENSMUST00000094713.3	3922	1157aa	Protein coding	CCDS71469	A2A7U2	TSL:1 GENCODE basic
Zmym6-206	ENSMUST00000151461.7	3115	No protein	Processed transcript	-	-	TSL:5
Zmym6-203	ENSMUST00000125160.1	2637	No protein	Processed transcript	-	-	TSL:1
Zmym6-205	ENSMUST00000146616.1	677	No protein	Processed transcript	-	-	TSL:3
Zmym6-204	ENSMUST00000129926.1	404	No protein	Processed transcript	-	-	TSL:3

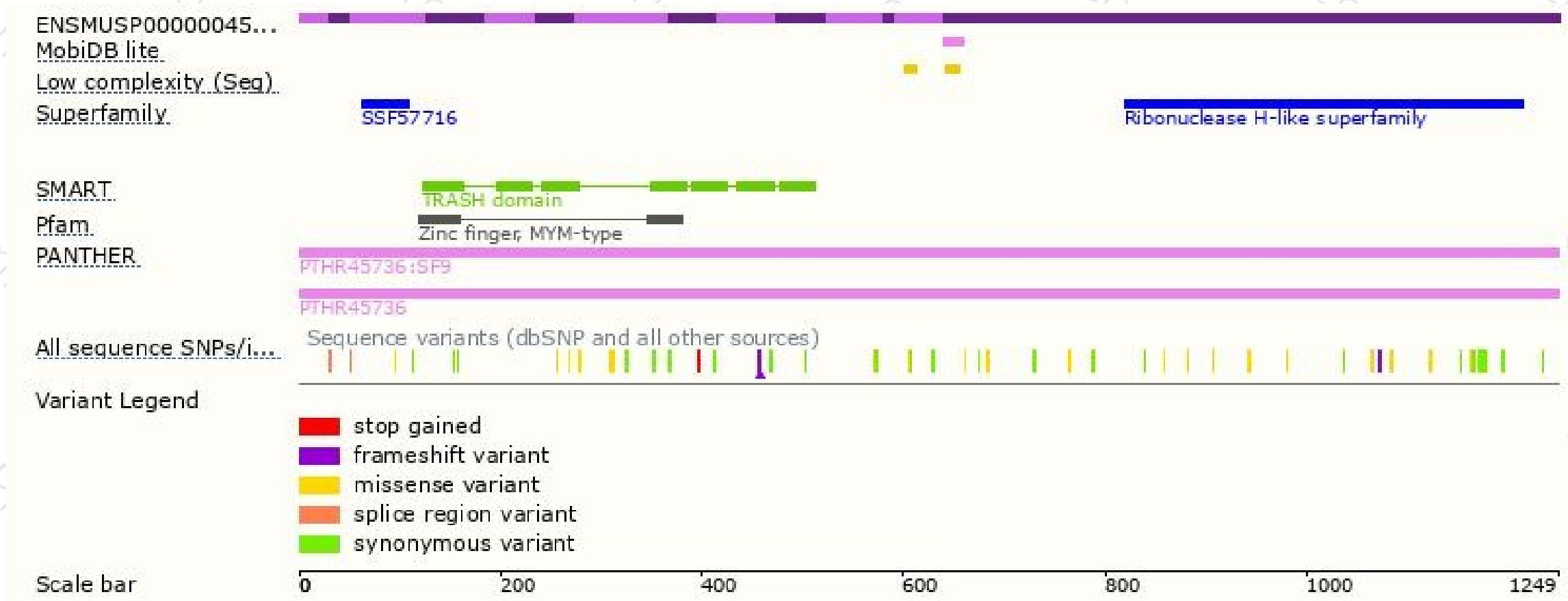
The strategy is based on the design of *Zmym6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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