

Zmym4 Cas9-CKO Strategy

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Design Date: 2020-9-30

Project Overview

Project Name

Zmym4

Project type

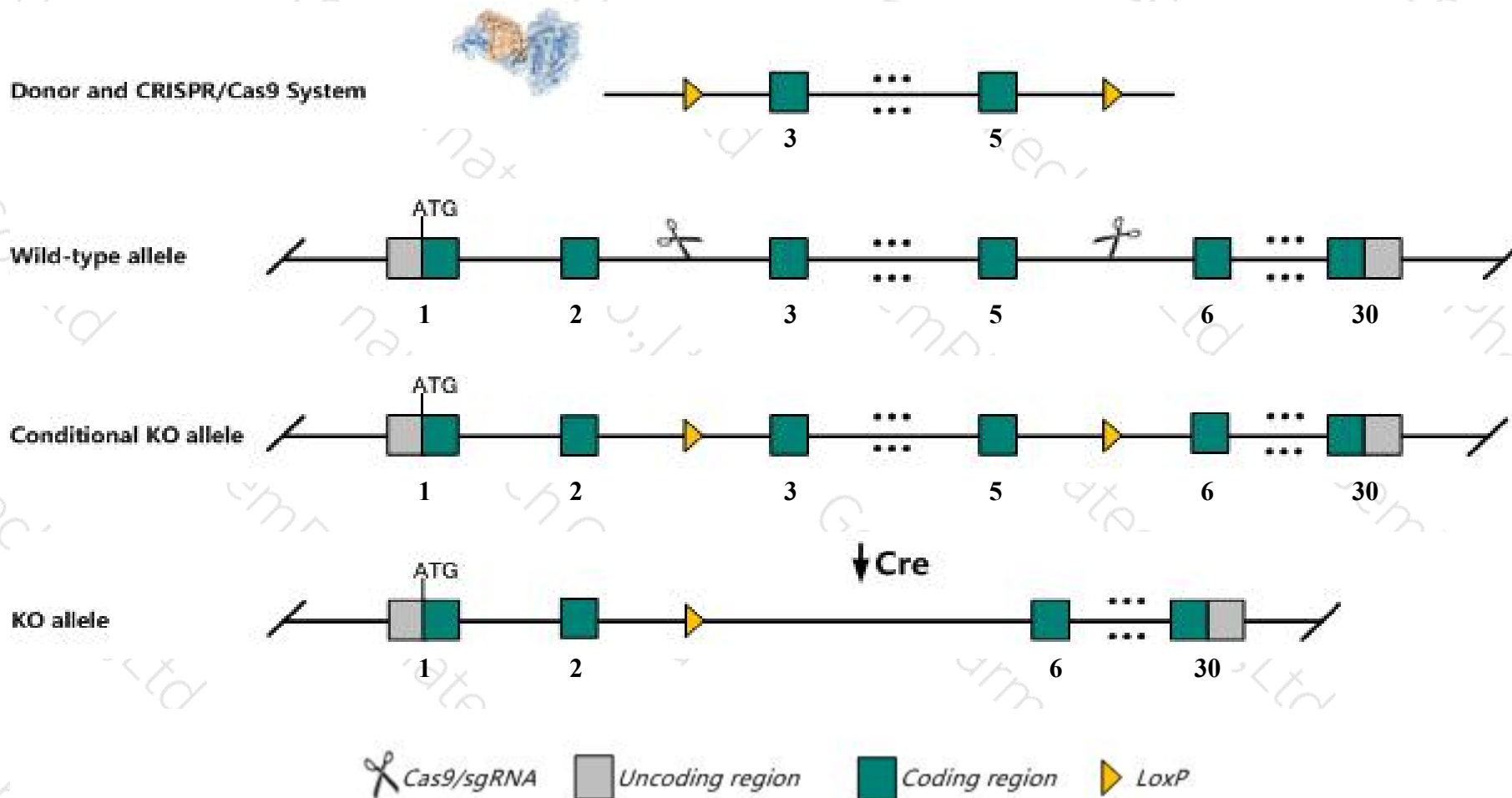
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zmym4* gene. The schematic diagram is as follows:



- The *Zmym4* gene has 9 transcripts. According to the structure of *Zmym4* gene, exon3-exon5 of *Zmym4*-201(ENSMUST00000106108.8) transcript is recommended as the knockout region. The region contains 755bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zmym4* 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.

- Transcript Zmym4-205/207/208 may not be affected.
- The *Zmym4* 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)

Zmym4 zinc finger, MYM-type 4 [*Mus musculus* (house mouse)]

Gene ID: 67785, updated on 25-Sep-2020

Summary

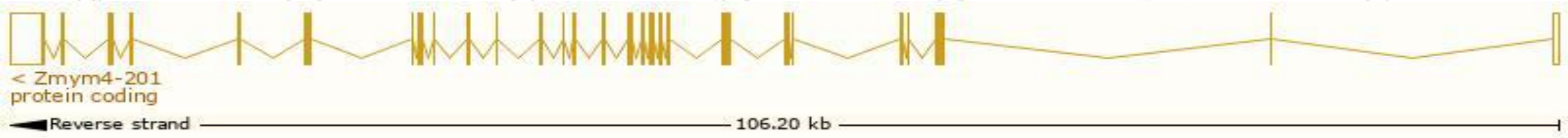
Official Symbol	Zmym4 provided by MGI
Official Full Name	zinc finger, MYM-type 4 provided by MGI
Primary source	MGI:MGI:1915035
See related	Ensembl:ENSMUSG00000042446
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	MYM; CDIR; Zfp26; Zfp262; Znf262; AI480785; AW493829; mKIAA0425; D630001M21; 6330503C17Rik
Expression	Broad expression in CNS E11.5 (RPKM 10.4), whole brain E14.5 (RPKM 8.1) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

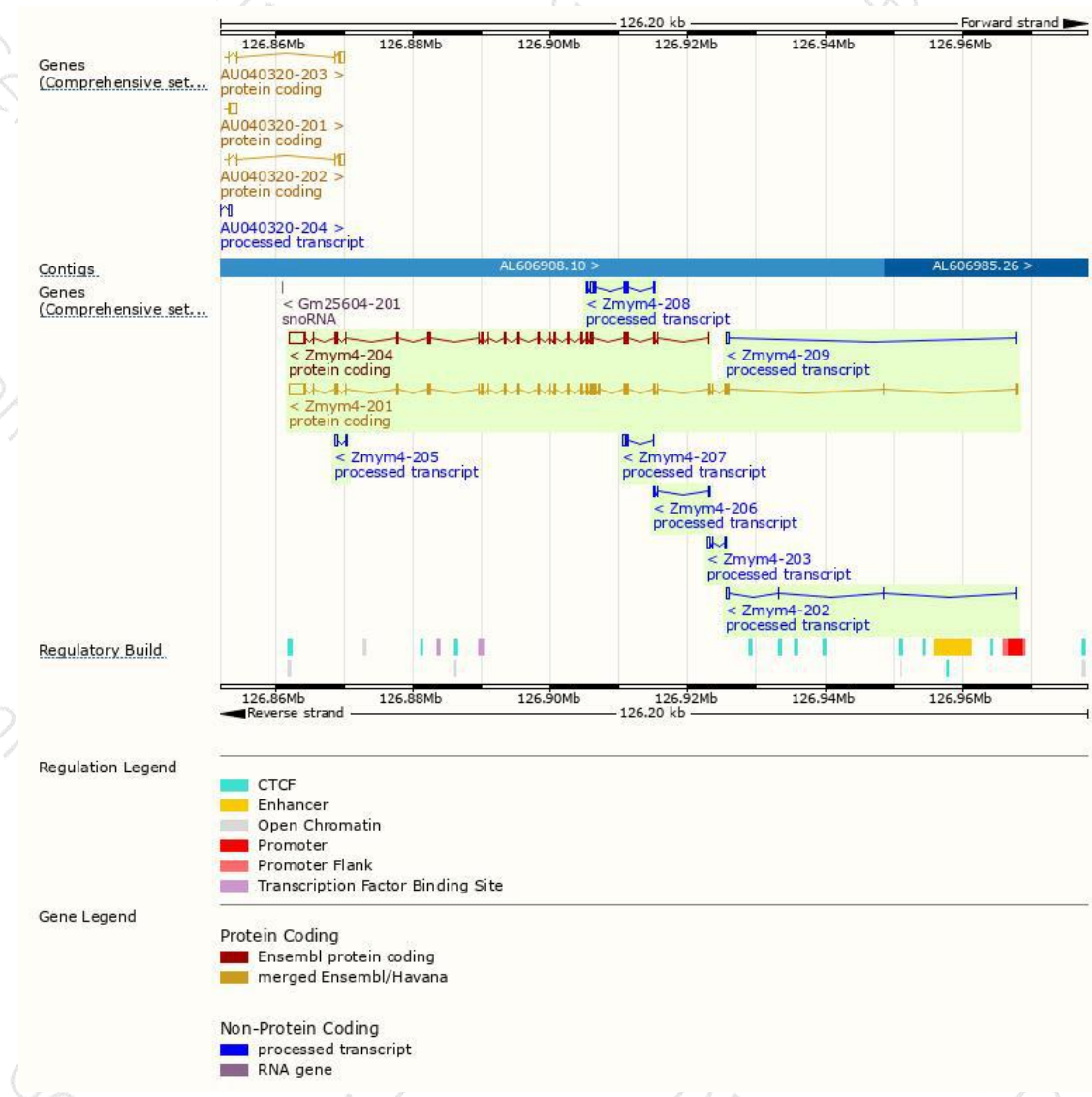
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zmym4-201	ENSMUST00000106108.8	7102	1549aa	Protein coding	CCDS51303	A2A791	TSL:1 GENCODE basic APPRIS P1
Zmym4-204	ENSMUST00000135003.1	5799	1209aa	Protein coding	-	F6VYE2	CDS 5' incomplete TSL:1
Zmym4-208	ENSMUST00000152952.7	1087	No protein	Processed transcript	-	-	TSL:5
Zmym4-207	ENSMUST00000152489.1	742	No protein	Processed transcript	-	-	TSL:2
Zmym4-202	ENSMUST00000123597.1	711	No protein	Processed transcript	-	-	TSL:3
Zmym4-206	ENSMUST00000151026.1	598	No protein	Processed transcript	-	-	TSL:2
Zmym4-205	ENSMUST00000150467.1	594	No protein	Processed transcript	-	-	TSL:3
Zmym4-209	ENSMUST00000154821.1	548	No protein	Processed transcript	-	-	TSL:3
Zmym4-203	ENSMUST00000129028.1	522	No protein	Processed transcript	-	-	TSL:3

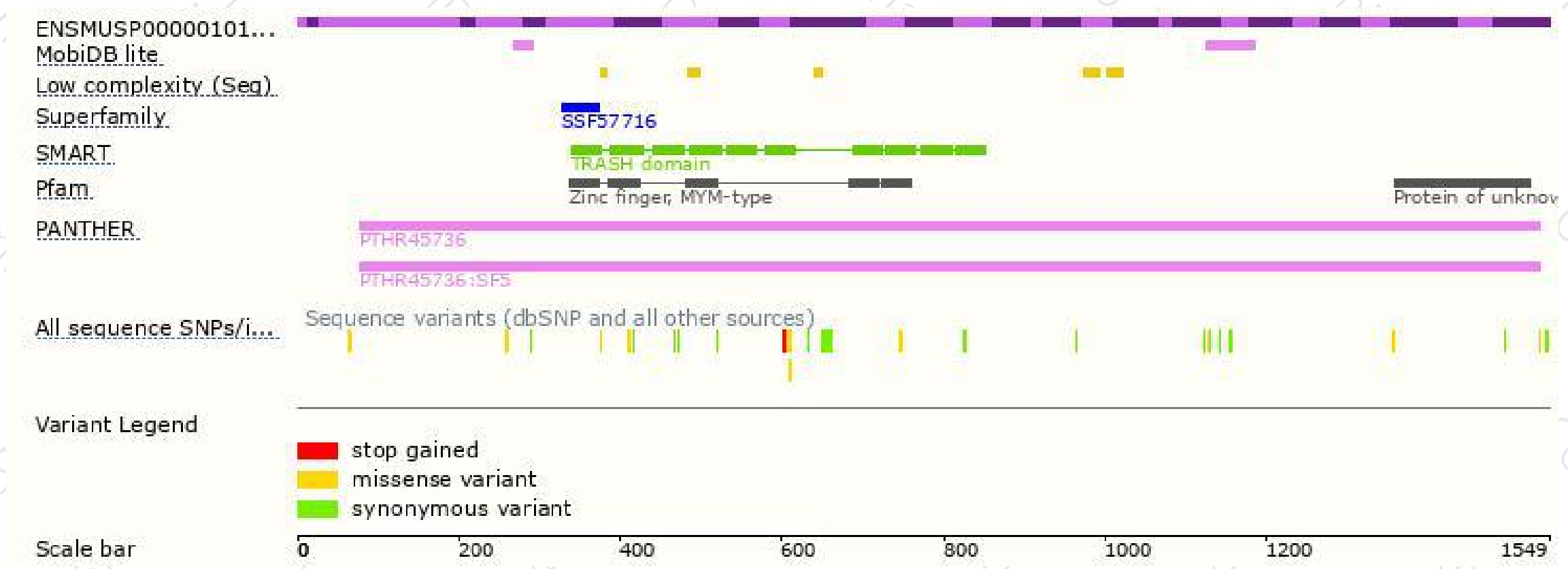
The strategy is based on the design of *Zmym4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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