

***Prdm10* Cas9-CKO Strategy**

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Project Overview

Project Name

Prdm10

Project type

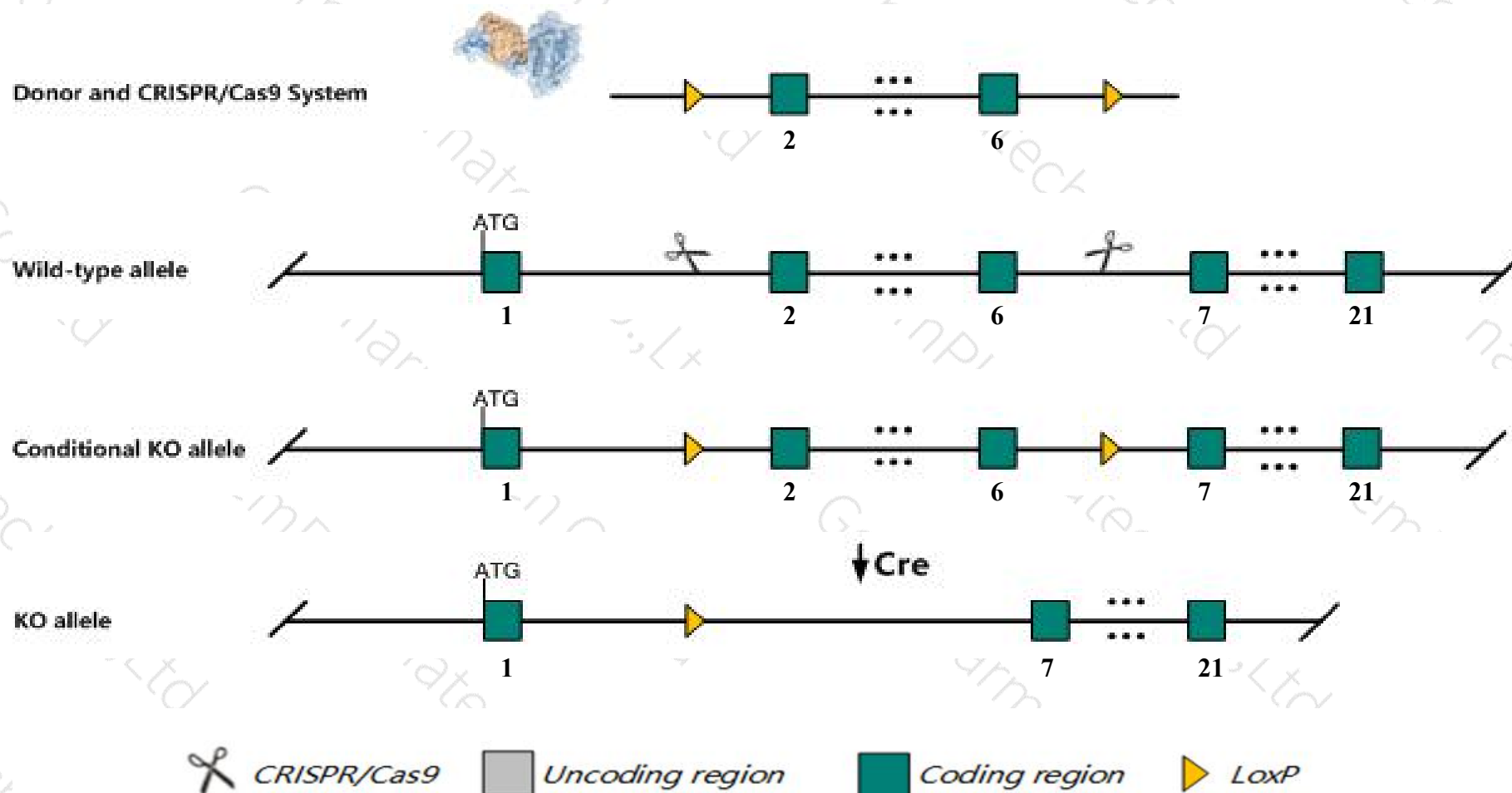
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prdm10* gene. The schematic diagram is as follows:



- The *Prdm10* gene has 5 transcripts. According to the structure of *Prdm10* gene, exon2-exon6 of *Prdm10-201* (ENSMUST00000074510.3) transcript is recommended as the knockout region. The region contains 851bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prdm10* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- The *Prdm10* gene is located on the Chr9. 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)

Prdm10 PR domain containing 10 [Mus musculus (house mouse)]

Gene ID: 382066, updated on 6-Apr-2019

Summary



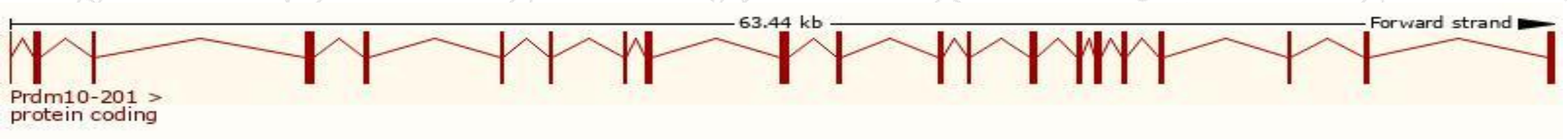
Official Symbol	Prdm10 provided by MGI
Official Full Name	PR domain containing 10 provided by MGI
Primary source	MGI:MGI:2682952
See related	Ensembl:ENSMUSG00000042496
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm1112, tristanin
Expression	Ubiquitous expression in whole brain E14.5 (RPKM 3.0), CNS E14 (RPKM 3.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

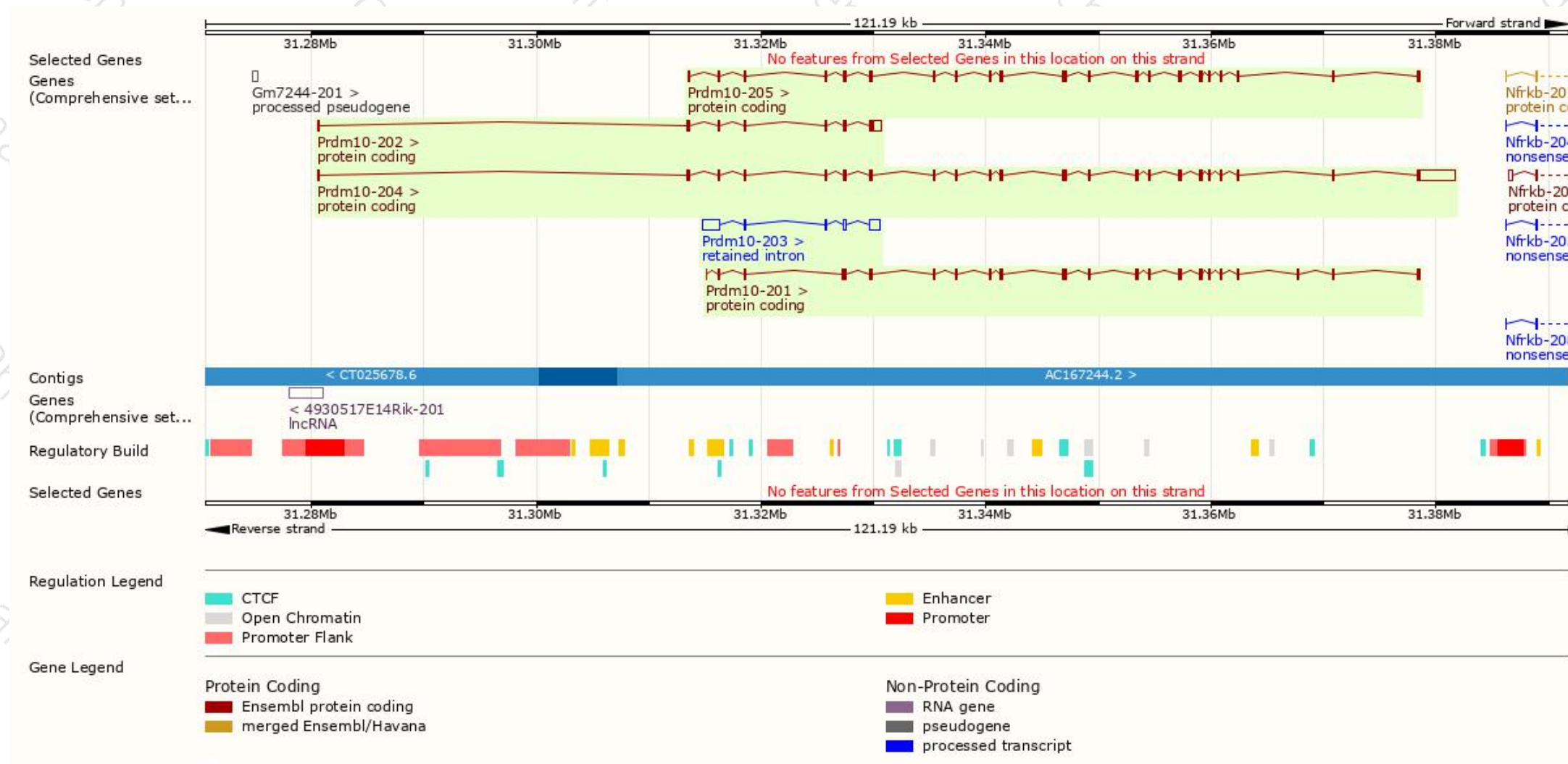
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prdm10-201	ENSMUST00000074510.3	3408	1135aa	Protein coding	CCDS40570	D3YYD1	TSL:5 GENCODE basic APPRIS P2
Prdm10-204	ENSMUST00000215499.1	6772	1115aa	Protein coding	-	A0A1L1SRM4	TSL:5 GENCODE basic APPRIS ALT2
Prdm10-205	ENSMUST00000215847.1	3519	1172aa	Protein coding	-	A0A1L1SS03	TSL:5 GENCODE basic APPRIS ALT2
Prdm10-202	ENSMUST00000117389.7	1952	341aa	Protein coding	-	Q3UTQ7	TSL:1 GENCODE basic
Prdm10-203	ENSMUST00000136144.1	3064	No protein	Retained intron	-	-	TSL:1

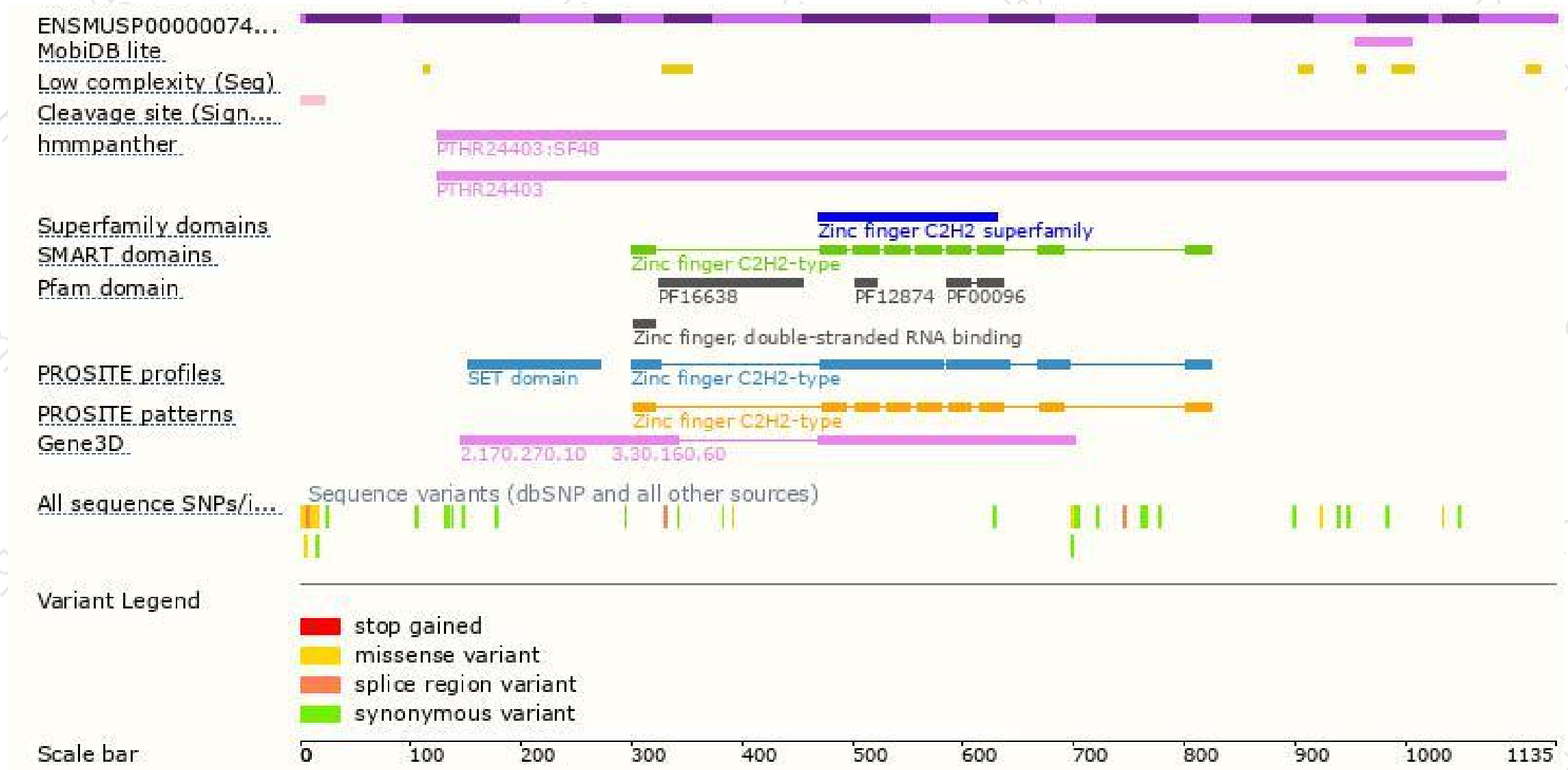
The strategy is based on the design of *Prdm10-201* transcript,The transcription is shown below



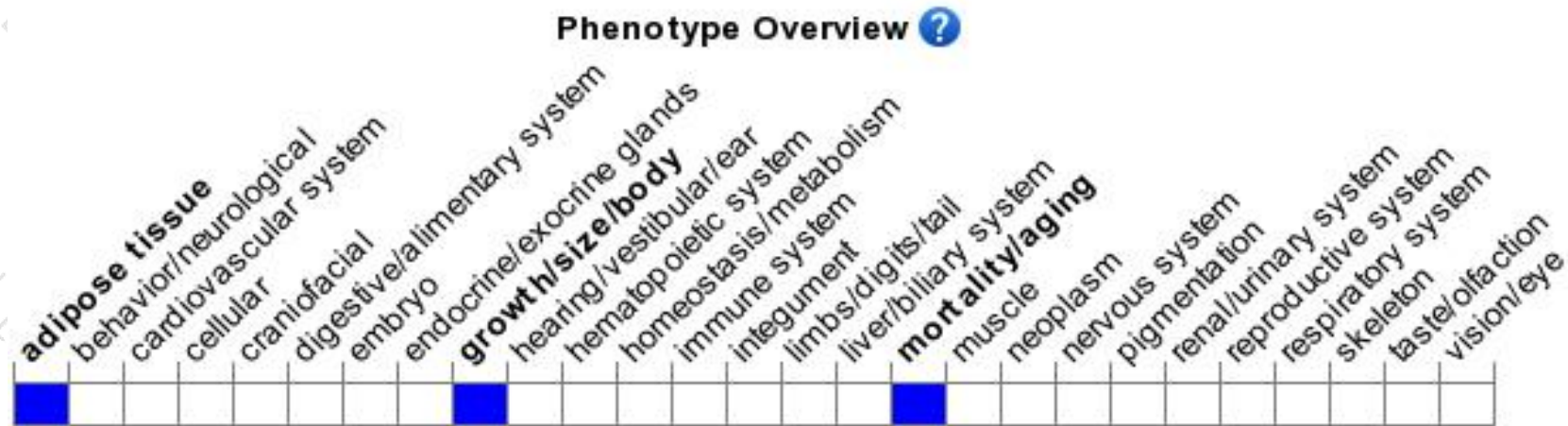
Genomic location distribution



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/>).

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

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