

RbmX2 Cas9-CKO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

Design Date:

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Project Overview

Project Name

***Rbm*x2**

Project type

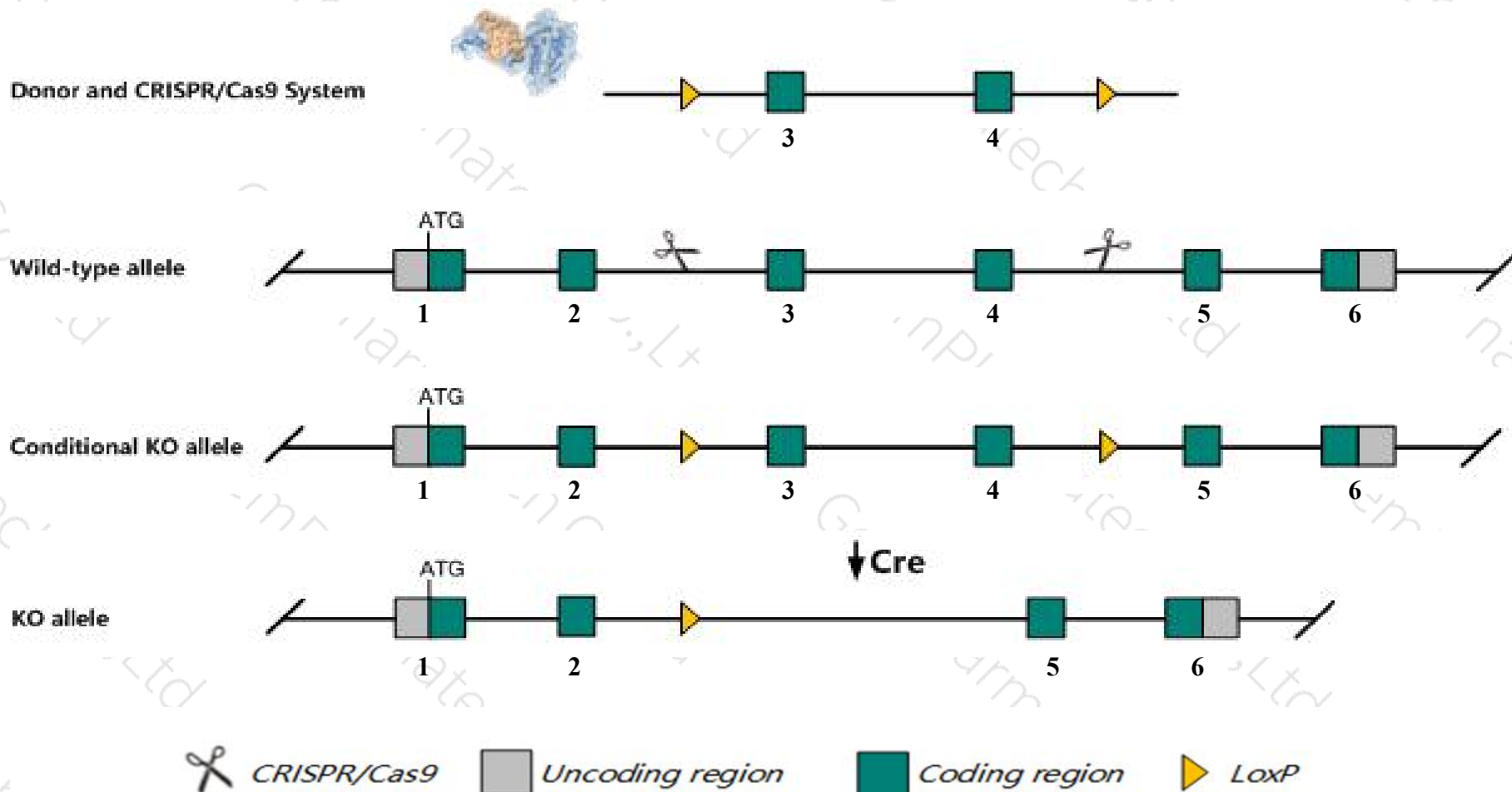
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rbm32* gene. The schematic diagram is as follows:



Technical routes

- The *Rbmx2* gene has 2 transcripts. According to the structure of *Rbmx2* gene, exon3-exon4 of *Rbmx2-201* (ENSMUST00000033433.2) transcript is recommended as the knockout region. The region contains 182bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rbmx2* 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 *RbmX2* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

RbmX2 RNA binding motif protein, X-linked 2 [*Mus musculus* (house mouse)]

Gene ID: 209003, updated on 12-Aug-2019

Summary

Official Symbol	RbmX2 provided by MGI
Official Full Name	RNA binding motif protein, X-linked 2 provided by MGI
Primary source	MGI:MGI:1919414
See related	Ensembl:ENSMUSG000000031107
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CGI-79; 2700089A17Rik; 2810411A03Rik
Expression	Broad expression in CNS E11.5 (RPKM 8.2), liver E14 (RPKM 7.3) and 19 other tissues See more
Orthologs	human all

Genomic context

Location: X; X A5

Exon count: 6

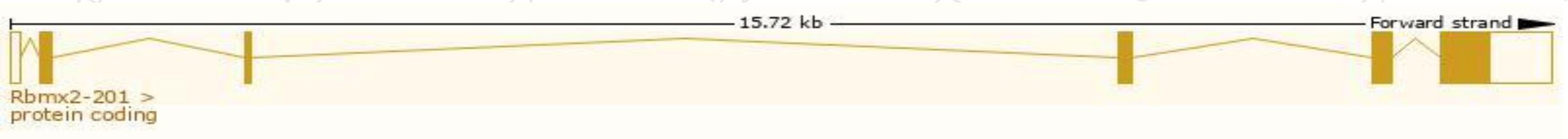
See RbmX2 in [Genome Data Viewer](#)

Transcript information (Ensembl)

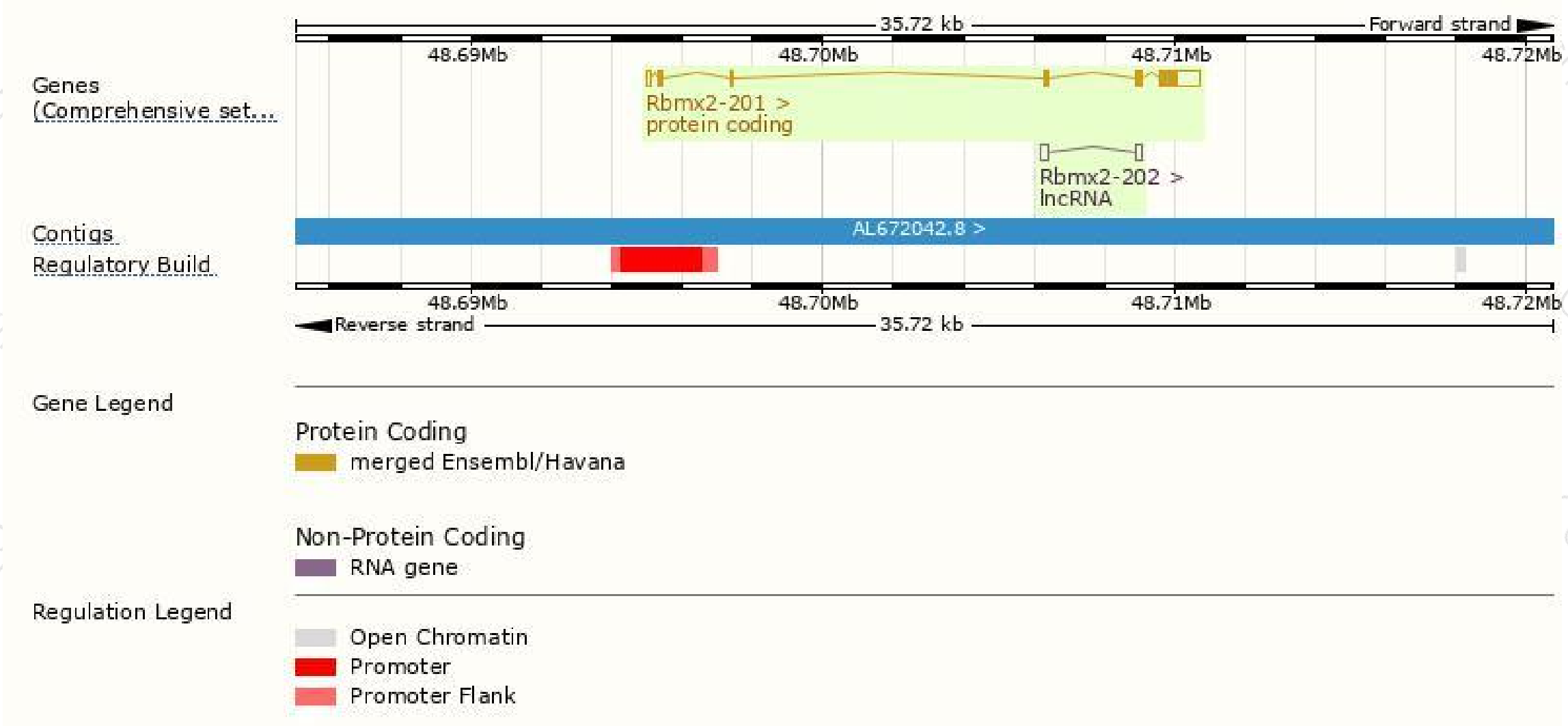
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
RbmX2-201	ENSMUST00000033433.2	1747	326aa	Protein coding	CCDS30114	Q8R0F5	TSL:1 GENCODE basic APPRIS P1
RbmX2-202	ENSMUST00000139150.1	432	No protein	lncRNA	-	-	TSL:2

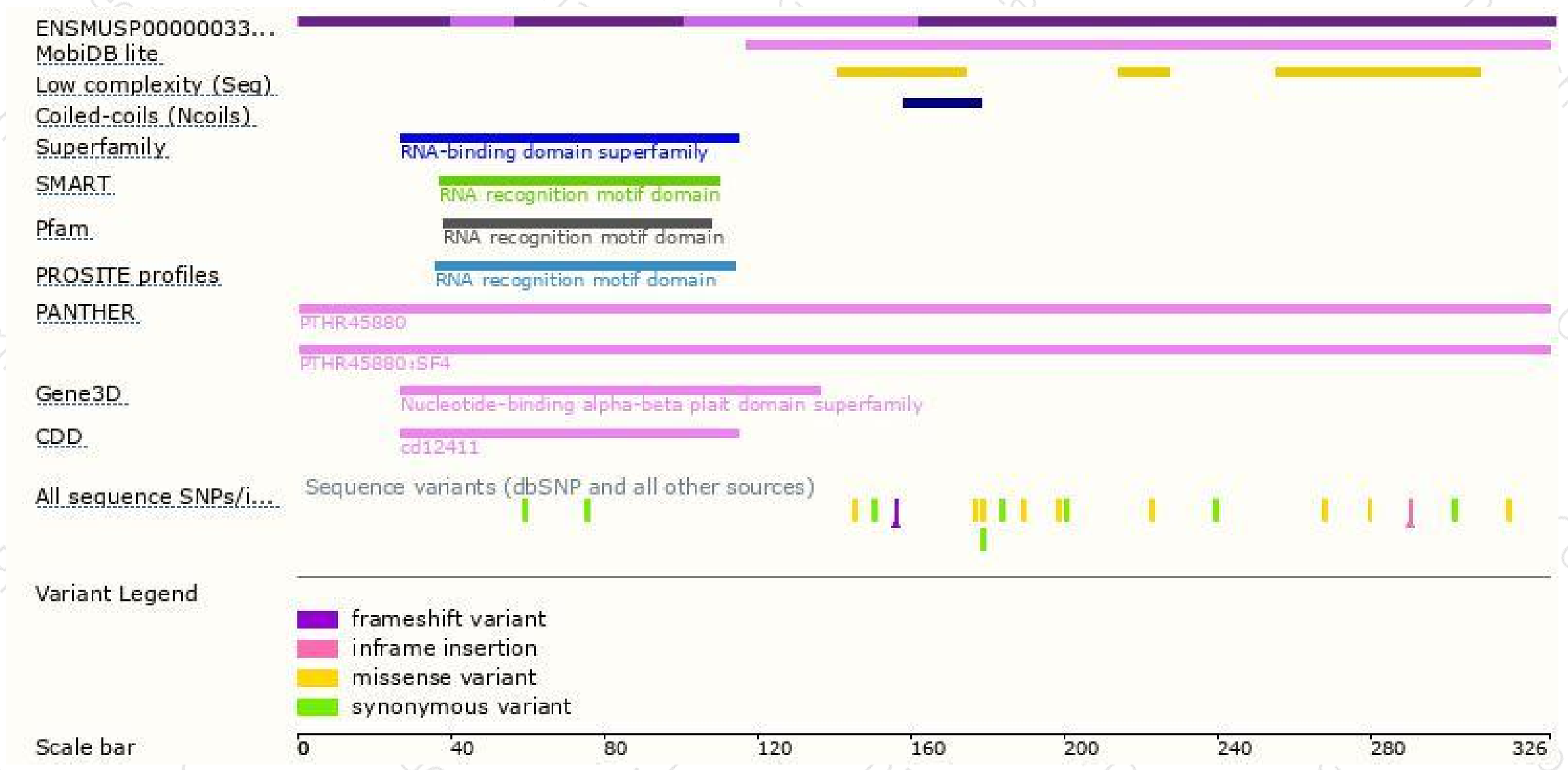
The strategy is based on the design of *RbmX2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

