

***Rbm18* Cas9-KO Strategy**

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Project Overview

Project Name

Rbm18

Project type

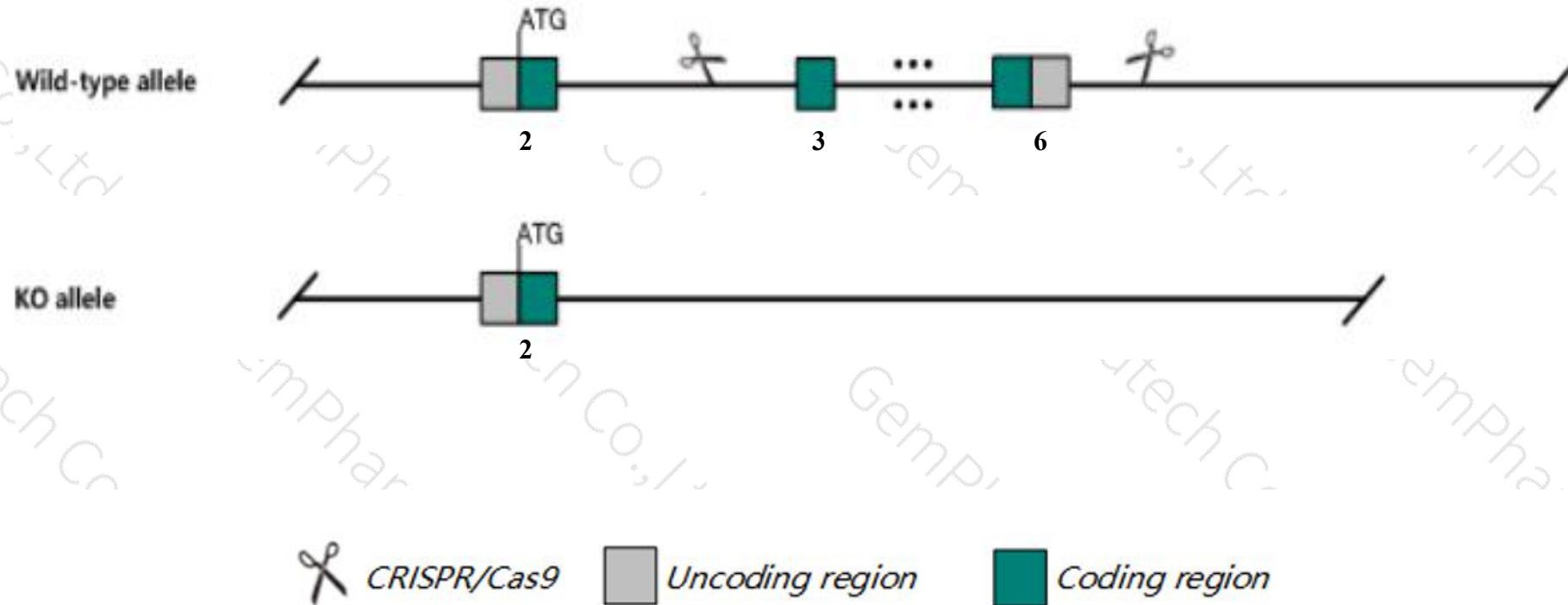
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rbm18* gene. The schematic diagram is as follows:



- The *Rbm18* gene has 5 transcripts. According to the structure of *Rbm18* gene, exon3-exon6 of *Rbm18*-201(ENSMUST00000028251.9) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rbm18* 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 *Rbm18* gene is located on the Chr2. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Rbm18 RNA binding motif protein 18 [Mus musculus (house mouse)]

Gene ID: 67889, updated on 13-Mar-2020

Summary



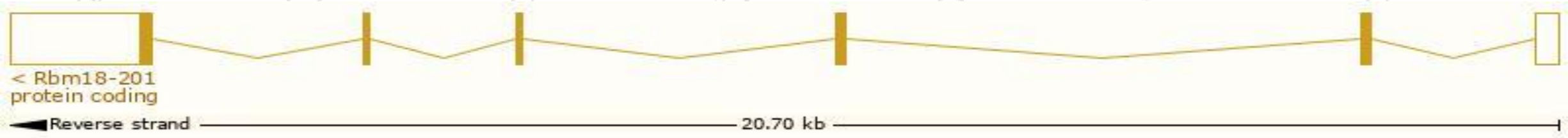
Official Symbol	Rbm18 provided by MGI
Official Full Name	RNA binding motif protein 18 provided by MGI
Primary source	MGI:MGI:1915139
See related	Ensembl:ENSMUSG00000026889
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2010004P11Rik, AU015530
Expression	Ubiquitous expression in CNS E14 (RPKM 21.2), whole brain E14.5 (RPKM 21.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

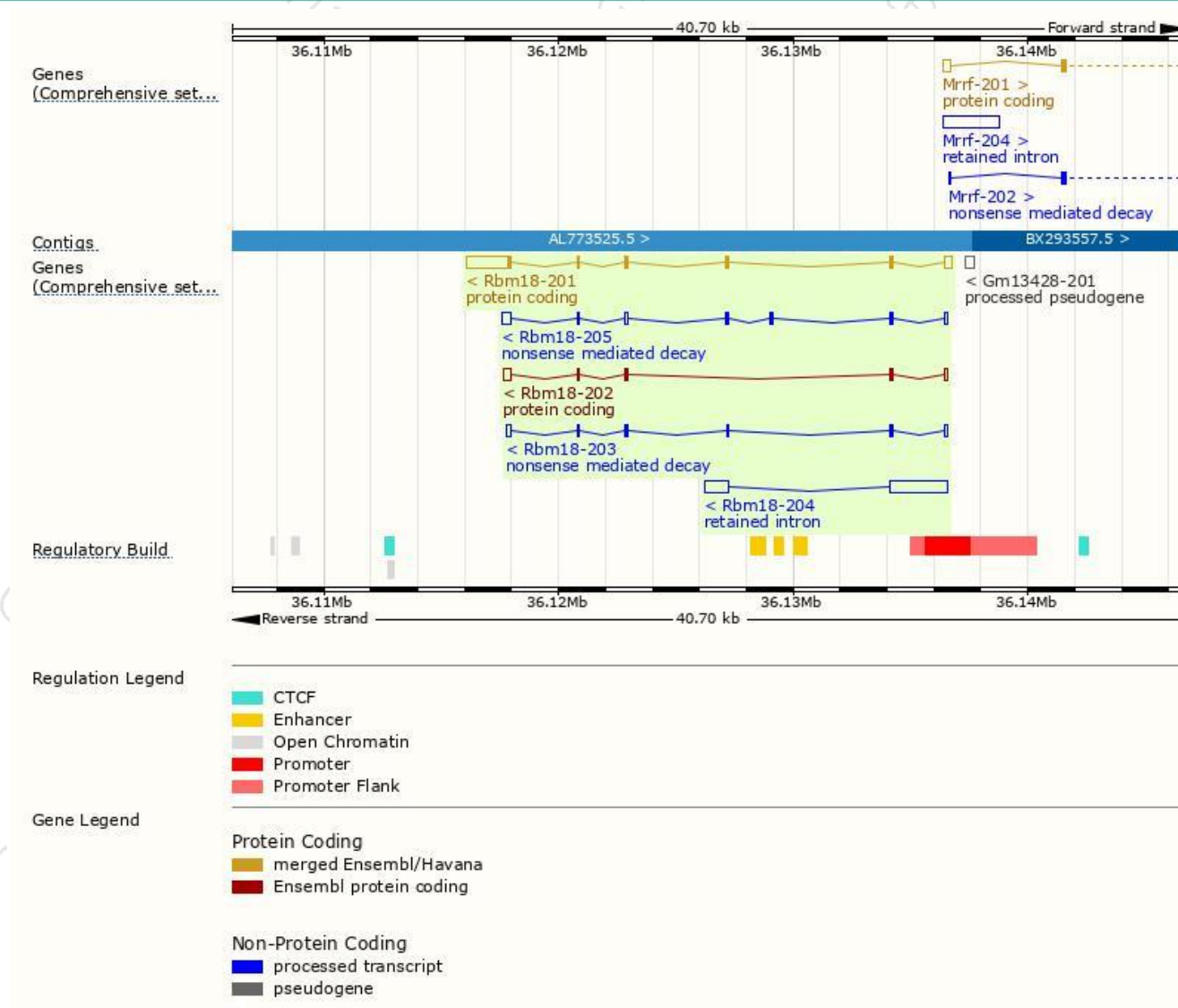
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rbm18-201	ENSMUST00000028251.9	2617	190aa	Protein coding	CCDS15969	Q9CR83	TSL:1 GENCODE basic APPRIS P1
Rbm18-202	ENSMUST00000122456.7	781	100aa	Protein coding	-	B0R043	TSL:1 GENCODE basic
Rbm18-205	ENSMUST00000200733.3	1000	85aa	Nonsense mediated decay	-	A0A0J9YUA6	TSL:5
Rbm18-203	ENSMUST00000134668.1	714	77aa	Nonsense mediated decay	-	D6REF9	TSL:2
Rbm18-204	ENSMUST00000142809.1	3509	No protein	Retained intron	-	-	TSL:1

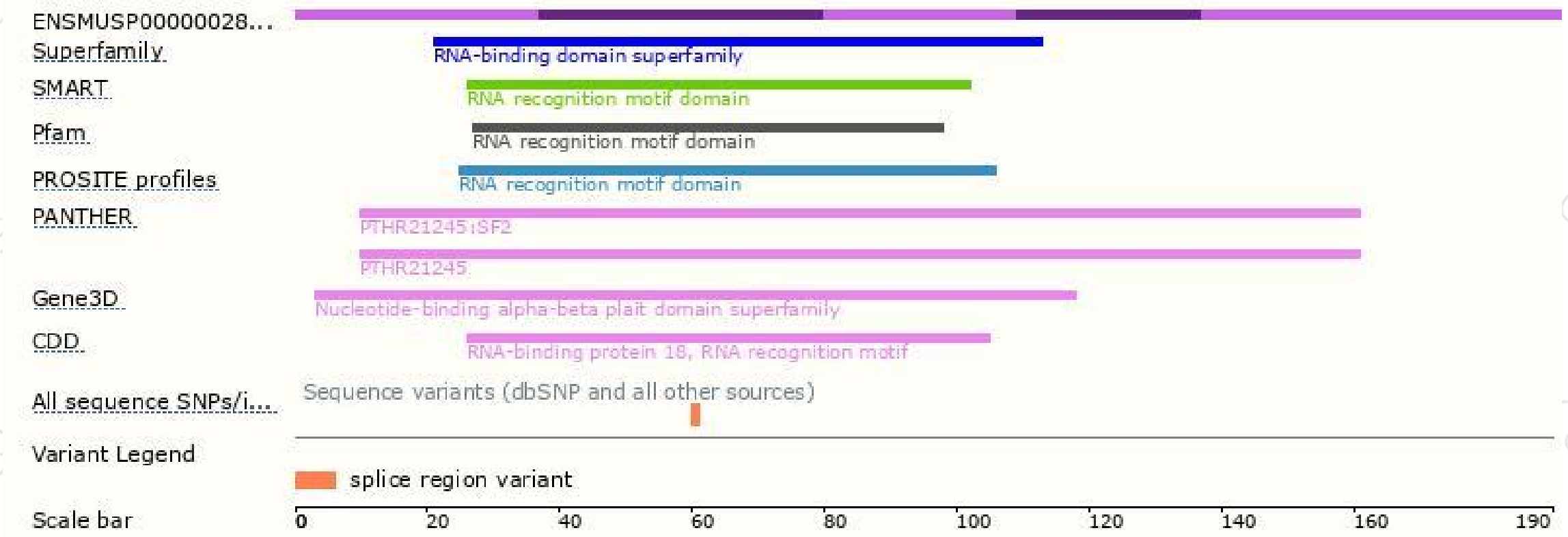
The strategy is based on the design of *Rbm18-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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