

***Rbm41* Cas9-KO Strategy**

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Project Overview

Project Name

Rbm41

Project type

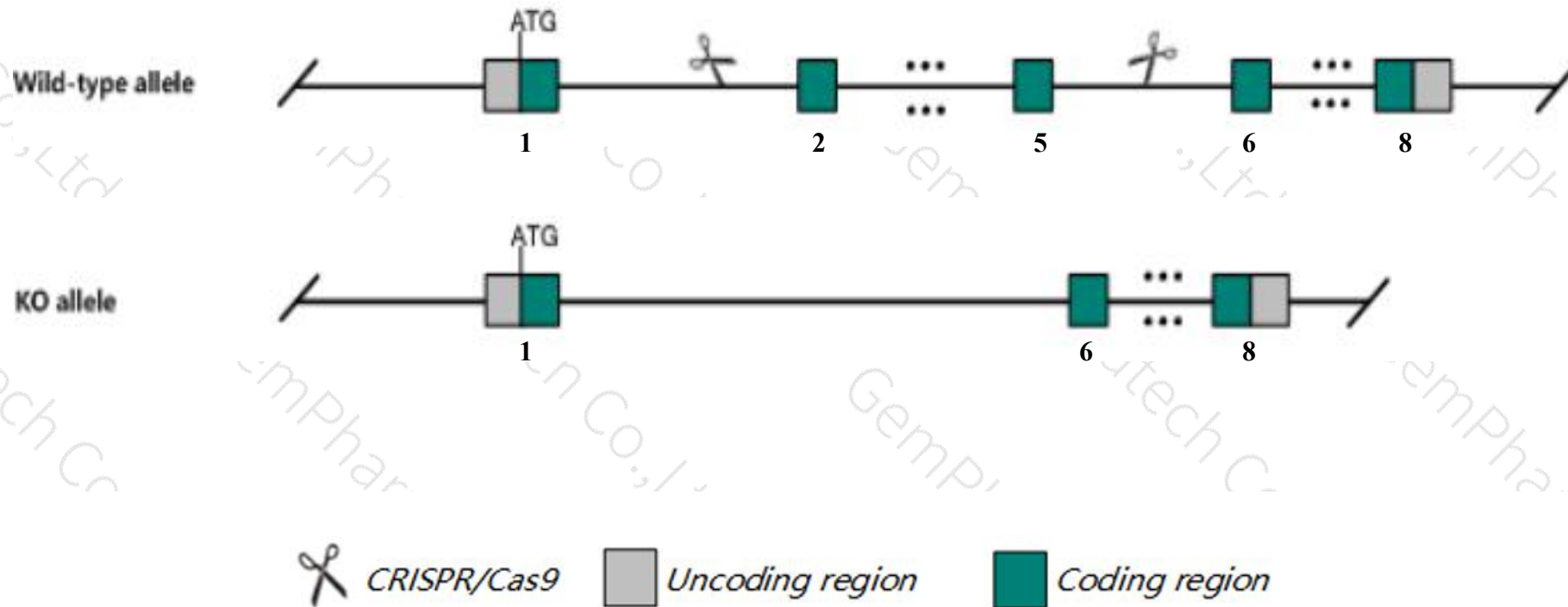
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rbm41* gene. The schematic diagram is as follows:



- The *Rbm41* gene has 7 transcripts. According to the structure of *Rbm41* gene, exon2-exon5 of *Rbm41*-204(ENSMUST00000113011.8) transcript is recommended as the knockout region. The region contains 587bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rbm41* 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.

- According to the existing MGI data, male chimeras hemizygous for a gene trapped allele appear normal at E9.5.
- The *Rbm41* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Rbm41 RNA binding motif protein 41 [Mus musculus (house mouse)]

Gene ID: 237073, updated on 13-Mar-2020

Summary



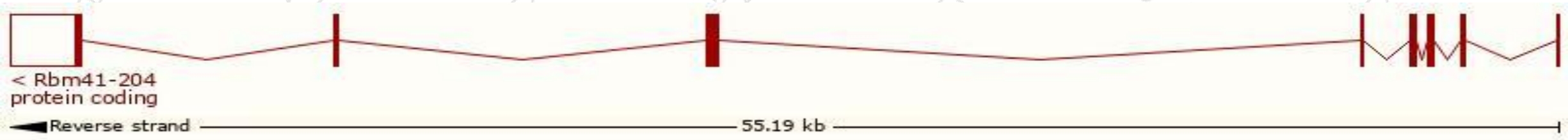
Official Symbol	Rbm41 provided by MGI
Official Full Name	RNA binding motif protein 41 provided by MGI
Primary source	MGI:MGI:2444923
See related	Ensembl:ENSMUSG00000031433
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BB131279, D330023I21Rik
Expression	Broad expression in CNS E18 (RPKM 2.0), CNS E11.5 (RPKM 1.9) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

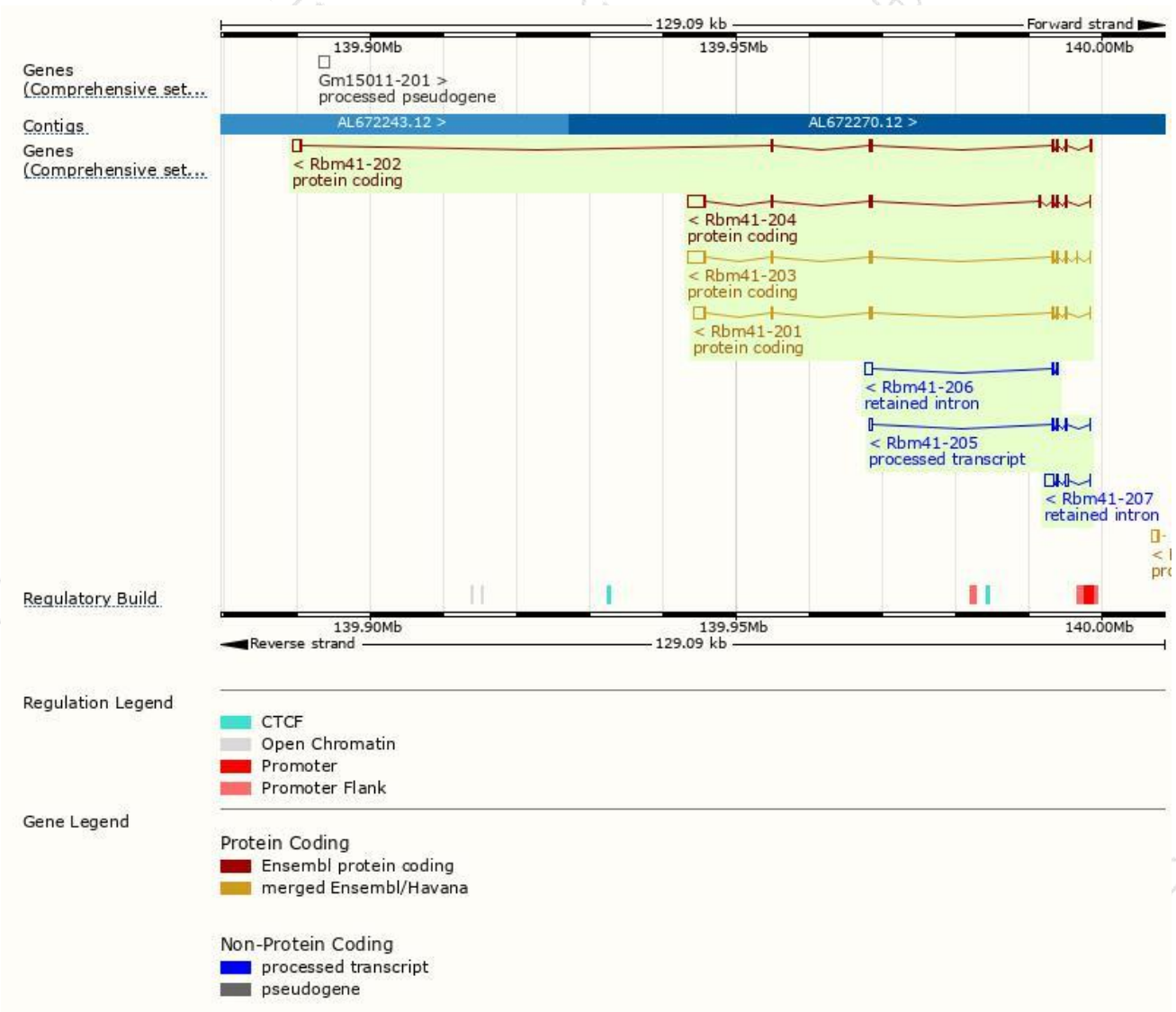
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rbm41-204	ENSMUST00000113011.8	3728	437aa	Protein coding	CCDS72439	A2AG09	TSL:1 GENCODE basic APPRIS ALT2
Rbm41-203	ENSMUST00000113007.7	3691	425aa	Protein coding	CCDS53204	Q8JZV4	TSL:1 GENCODE basic
Rbm41-201	ENSMUST00000033810.7	2787	413aa	Protein coding	CCDS41147	Q8JZV4	TSL:1 GENCODE basic APPRIS P3
Rbm41-202	ENSMUST00000087400.11	2229	404aa	Protein coding	CCDS53205	Q8JZV4	TSL:1 GENCODE basic
Rbm41-205	ENSMUST00000135126.7	726	No protein	Processed transcript	-	-	TSL:3
Rbm41-207	ENSMUST00000148703.1	1691	No protein	Retained intron	-	-	TSL:2
Rbm41-206	ENSMUST00000138635.7	1395	No protein	Retained intron	-	-	TSL:2

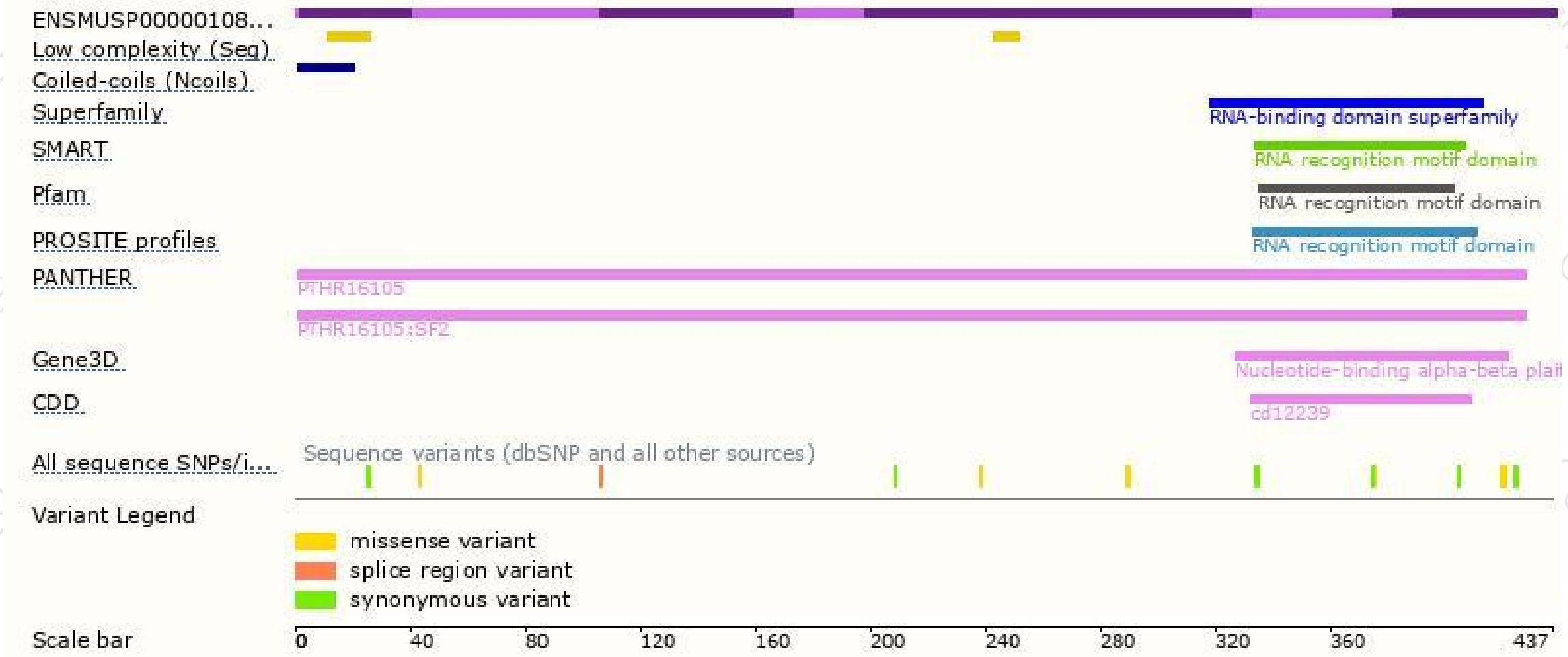
The strategy is based on the design of *Rbm41-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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