

***Rbm26* Cas9-CKO Strategy**

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Project Overview

Project Name

Rbm26

Project type

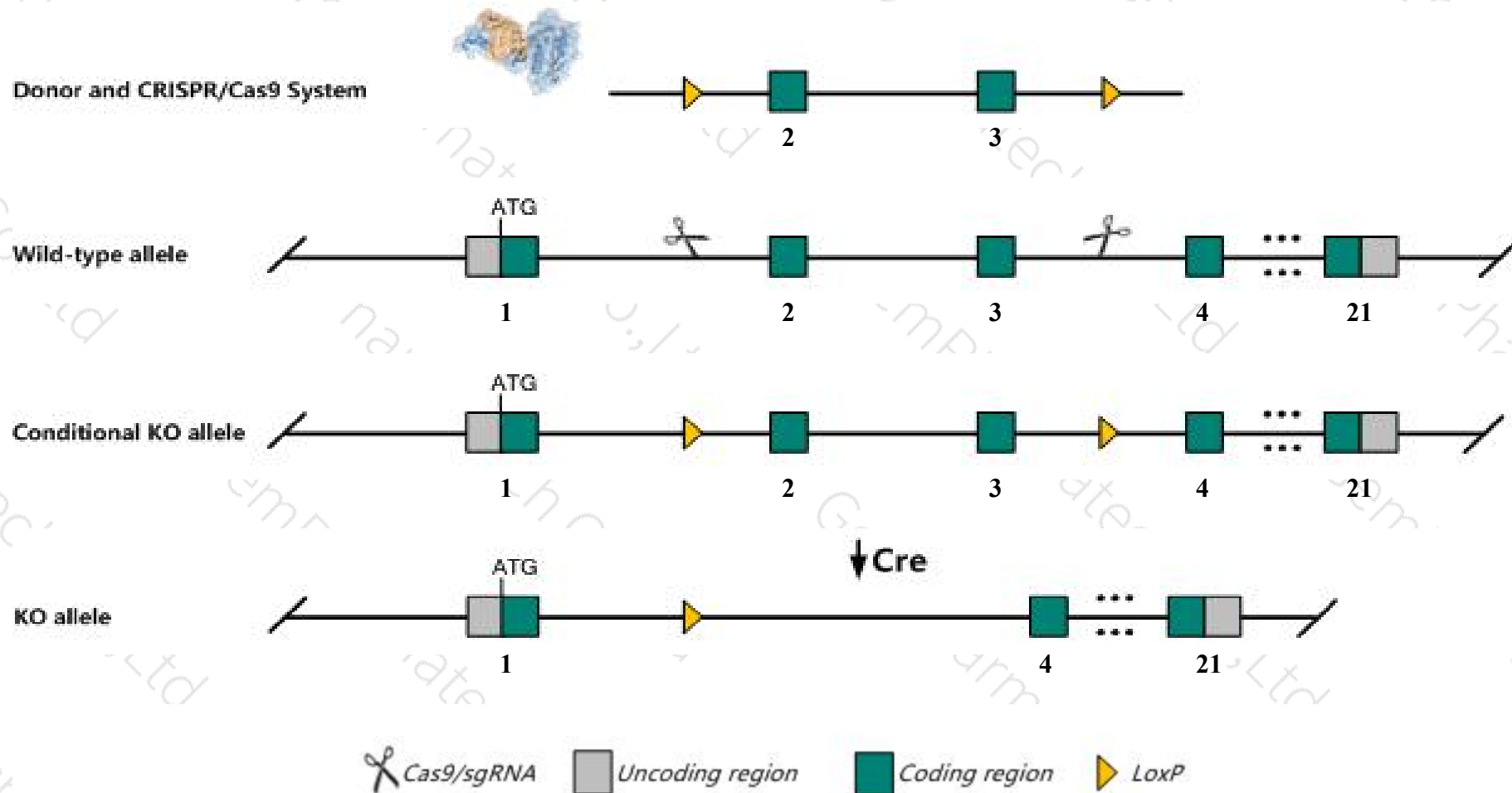
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rbm26* gene. The schematic diagram is as follows:



Technical routes

- The *Rbm26* gene has 5 transcripts. According to the structure of *Rbm26* gene, exon2-exon3 of *Rbm26*-202(ENSMUST00000100327.9) transcript is recommended as the knockout region. The region contains 256bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rbm26* 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.

- The *Rbm26* gene is located on the Chr14. 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)

Rbm26 RNA binding motif protein 26 [Mus musculus (house mouse)]

Gene ID: 74213, updated on 13-Mar-2020

Summary



Official Symbol	Rbm26 provided by MGI
Official Full Name	RNA binding motif protein 26 provided by MGI
Primary source	MGI:MGI:1921463
See related	Ensembl:ENSMUSG00000022119
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	1700009P03Rik, AI447318, C230097K14Rik, C86225, MLZ-393, Pro1777, Se70-2
Expression	Ubiquitous expression in CNS E11.5 (RPKM 9.9), limb E14.5 (RPKM 8.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

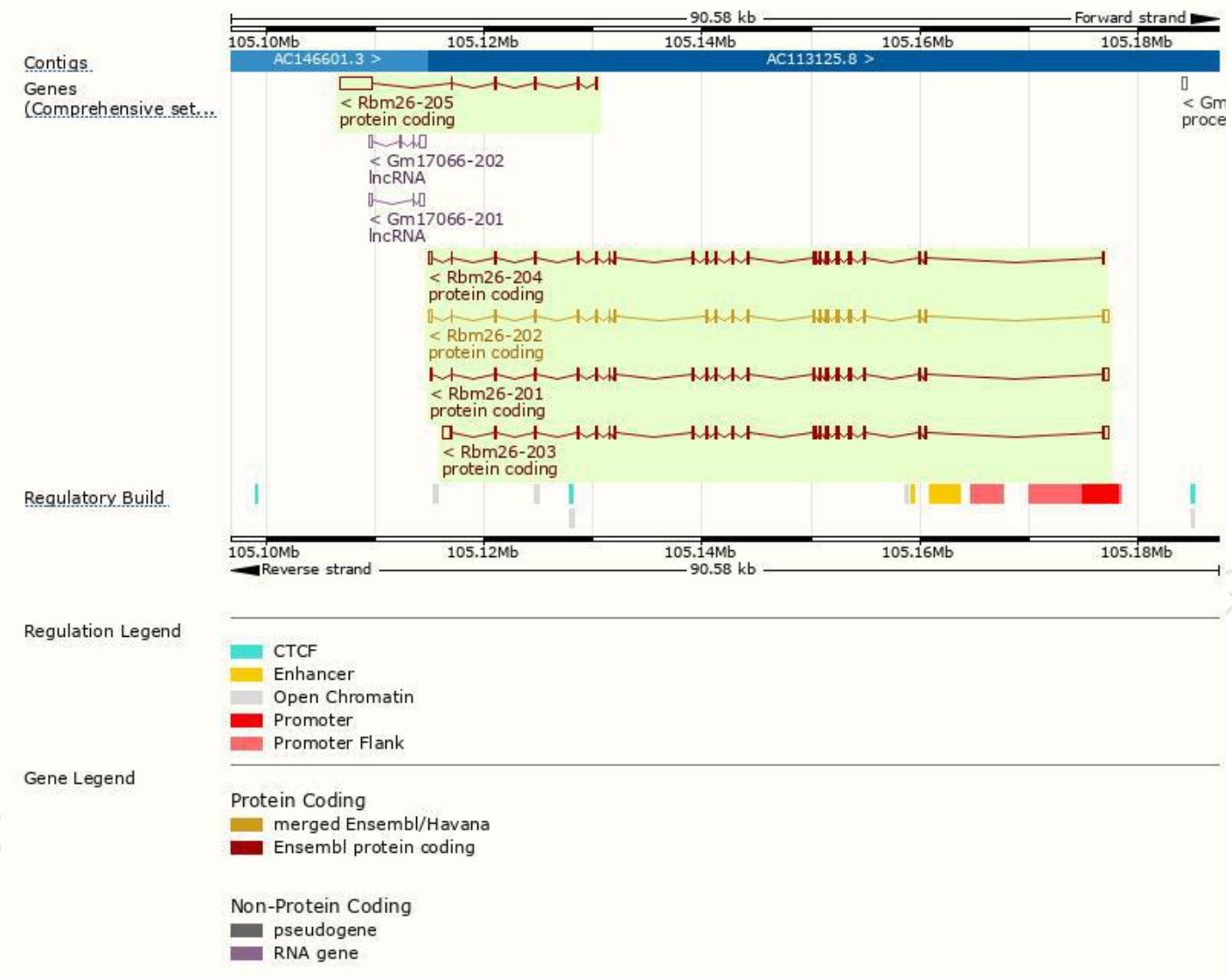
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rbm26-202	ENSMUST00000100327.9	3634	983aa	Protein coding	CCDS37003	E9PUF4	TSL:1 GENCODE basic APPRIS P2
Rbm26-203	ENSMUST00000163499.1	4212	1001aa	Protein coding	-	E9Q640	TSL:1 GENCODE basic
Rbm26-205	ENSMUST00000172122.7	3664	210aa	Protein coding	-	A0A0R4J214	CDS 5' incomplete TSL:2
Rbm26-201	ENSMUST00000022715.13	3633	1007aa	Protein coding	-	Q6NZN0	TSL:5 GENCODE basic APPRIS ALT1
Rbm26-204	ENSMUST00000163545.7	3270	1009aa	Protein coding	-	E9PYZ7	TSL:5 GENCODE basic APPRIS ALT2

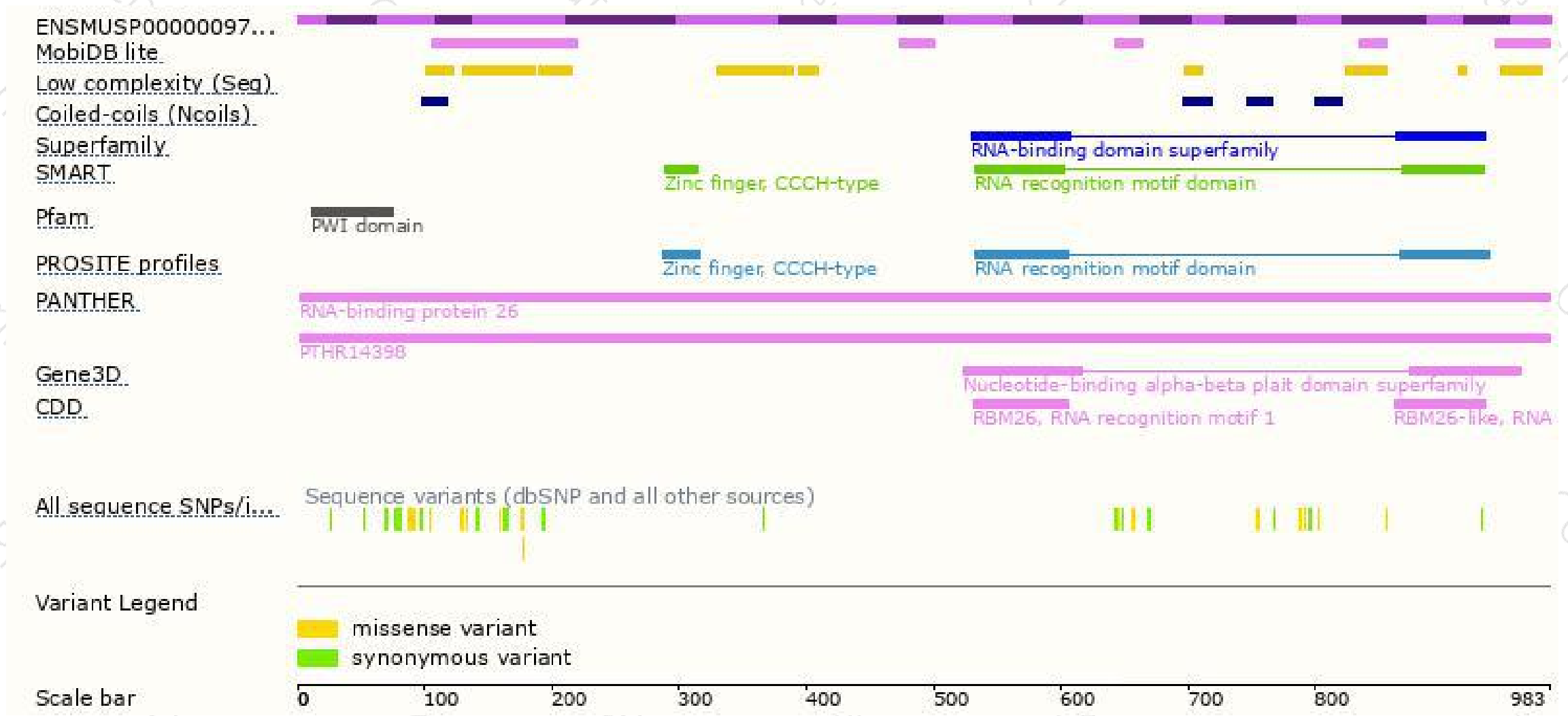
The strategy is based on the design of *Rbm26-202* transcript,the transcription is shown below:



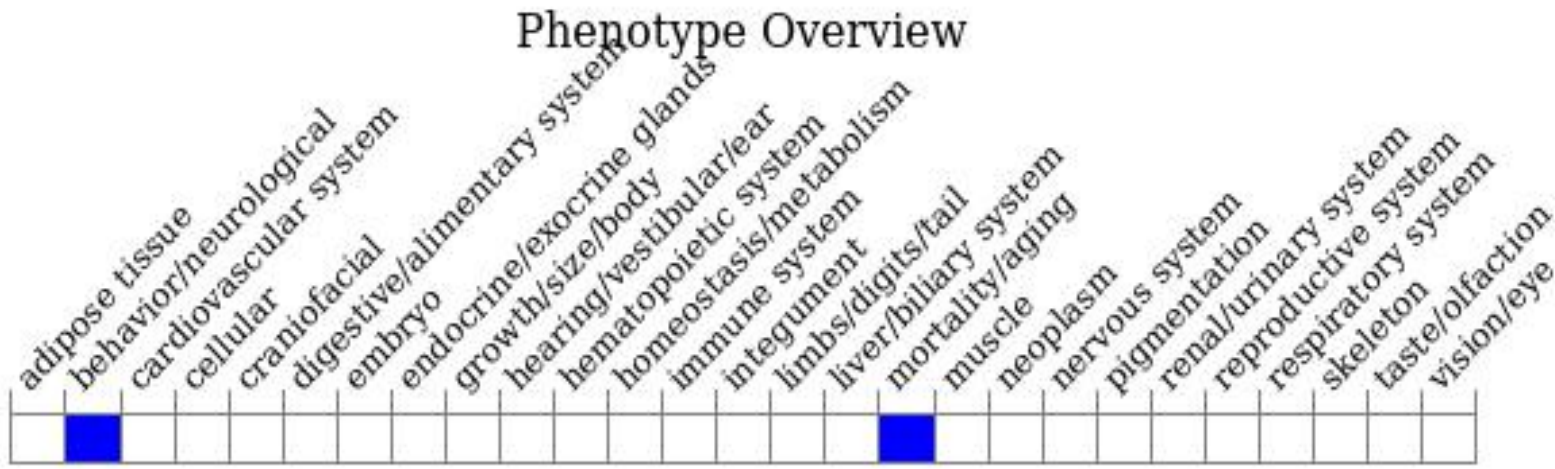
Genomic location distribution



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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