

# ***Prrc2b Cas9-KO Strategy***

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**Reviewer**

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# Project Overview

**Project Name**

***Prrc2b***

**Project type**

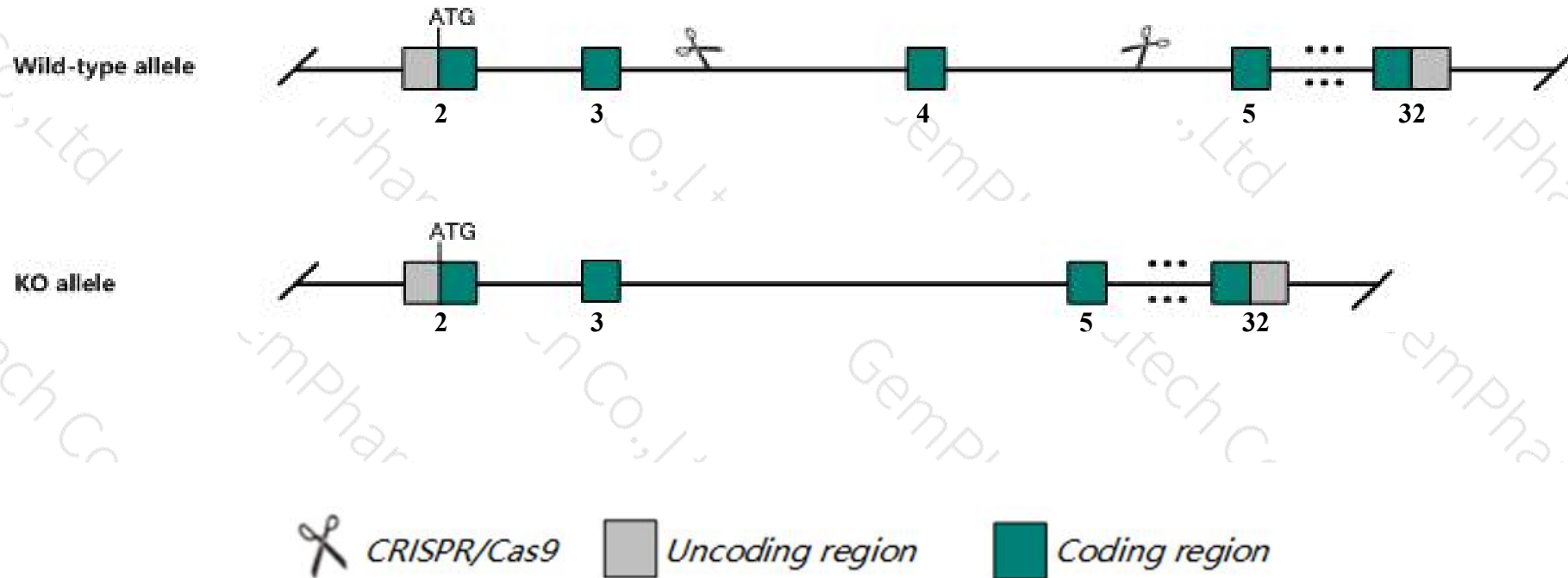
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prrc2b* gene. The schematic diagram is as follows:



- The *Prrc2b* gene has 10 transcripts. According to the structure of *Prrc2b* gene, exon4 of *Prrc2b-202* (ENSMUST00000069817.14) transcript is recommended as the knockout region. The region contains 103bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prrc2b* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Prirc2b* 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.
- Transcript *Prirc2b*-204,210 may not be affected.
- 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)

## Prrc2b proline-rich coiled-coil 2B [ *Mus musculus* (house mouse) ]

Gene ID: 227723, updated on 12-Aug-2019

### Summary

**Official Symbol** Prrc2b provided by [MGI](#)

**Official Full Name** proline-rich coiled-coil 2B provided by [MGI](#)

**Primary source** [MGI:MGI:1923304](#)

**See related** [Ensembl:ENSMUSG00000039262](#)

**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** Bat2l; Bat2l1; AI173903; mKIAA0515; D430039P21; 5830434P21Rik

**Expression** Ubiquitous expression in whole brain E14.5 (RPKM 35.1), ovary adult (RPKM 32.2) and 28 other tissues [See more](#)

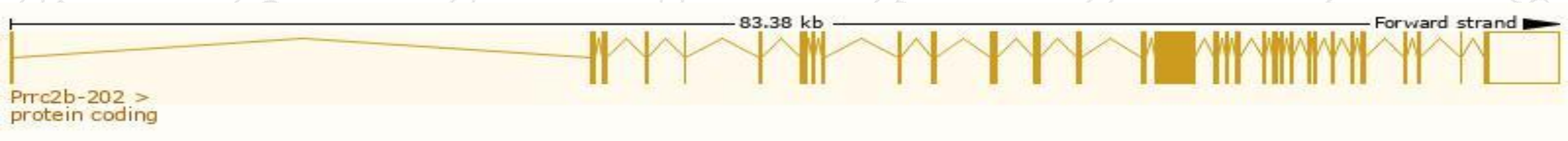
**Orthologs** [human](#) [all](#)

# Transcript information (Ensembl)

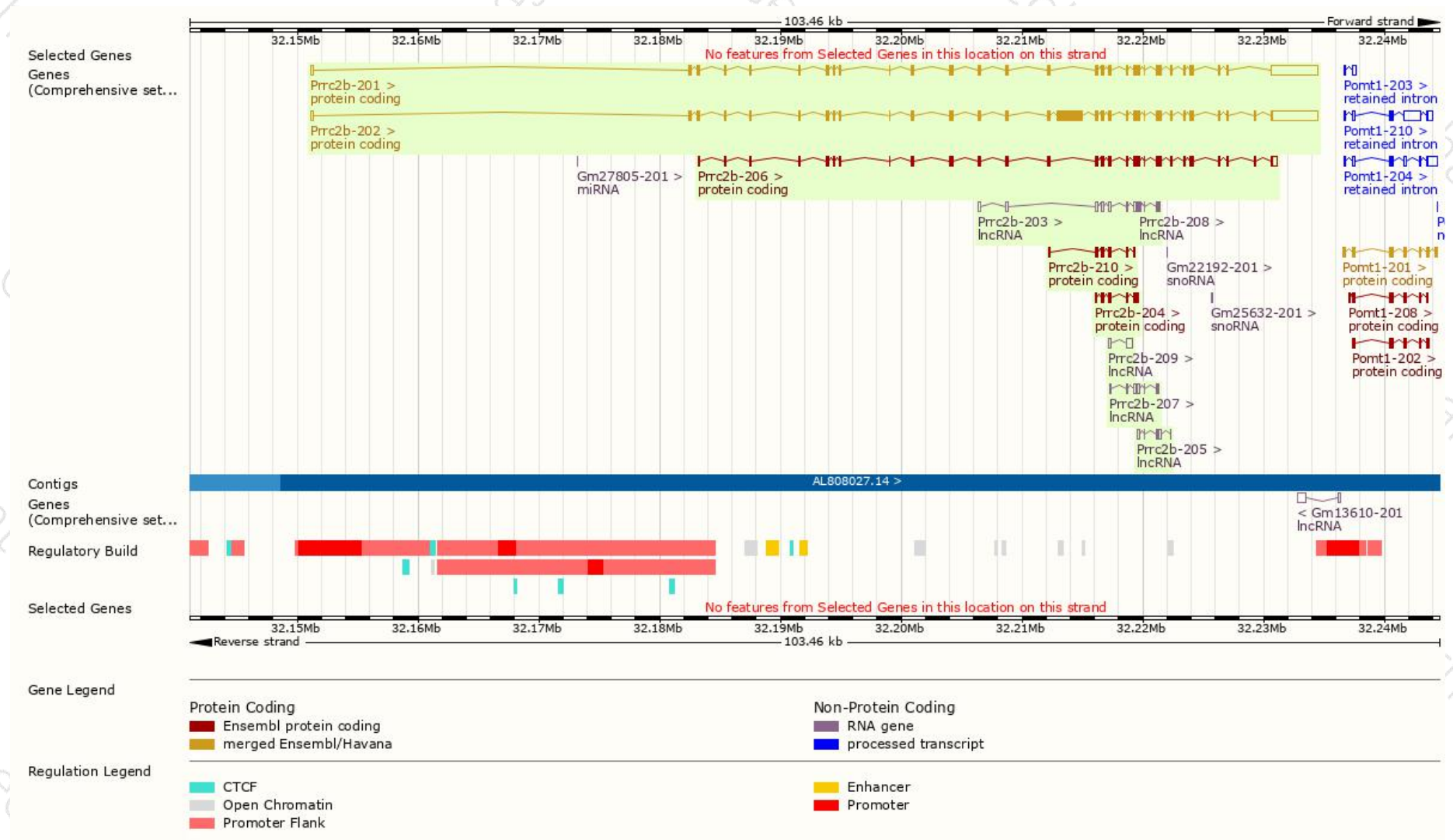
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prrc2b-202	<a href="#">ENSMUST00000069817.14</a>	10671	<a href="#">2230aa</a>	Protein coding	<a href="#">CCDS50565</a>	<a href="#">F8WHT3</a>	TSL:1 GENCODE basic APPRIS ALT2
Prrc2b-201	<a href="#">ENSMUST00000036691.13</a>	8612	<a href="#">1486aa</a>	Protein coding	<a href="#">CCDS15907</a>	<a href="#">Q7TPM1</a>	TSL:1 GENCODE basic APPRIS P3
Prrc2b-206	<a href="#">ENSMUST00000132459.7</a>	4837	<a href="#">1472aa</a>	Protein coding	-	<a href="#">F7AYW2</a>	CDS 5' incomplete TSL:1
Prrc2b-210	<a href="#">ENSMUST00000156313.7</a>	751	<a href="#">250aa</a>	Protein coding	-	<a href="#">F6V431</a>	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Prrc2b-204	<a href="#">ENSMUST00000128936.1</a>	696	<a href="#">232aa</a>	Protein coding	-	<a href="#">F6Q3E1</a>	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Prrc2b-203	<a href="#">ENSMUST00000123270.7</a>	1258	No protein	Processed transcript	-	-	TSL:3
Prrc2b-207	<a href="#">ENSMUST00000140015.7</a>	737	No protein	Processed transcript	-	-	TSL:3
Prrc2b-205	<a href="#">ENSMUST00000129626.7</a>	623	No protein	Processed transcript	-	-	TSL:2
Prrc2b-209	<a href="#">ENSMUST00000142219.1</a>	604	No protein	Processed transcript	-	-	TSL:5
Prrc2b-208	<a href="#">ENSMUST00000141053.1</a>	383	No protein	Processed transcript	-	-	TSL:3

The strategy is based on the design of *Prrc2b-202* transcript,The transcription is shown below

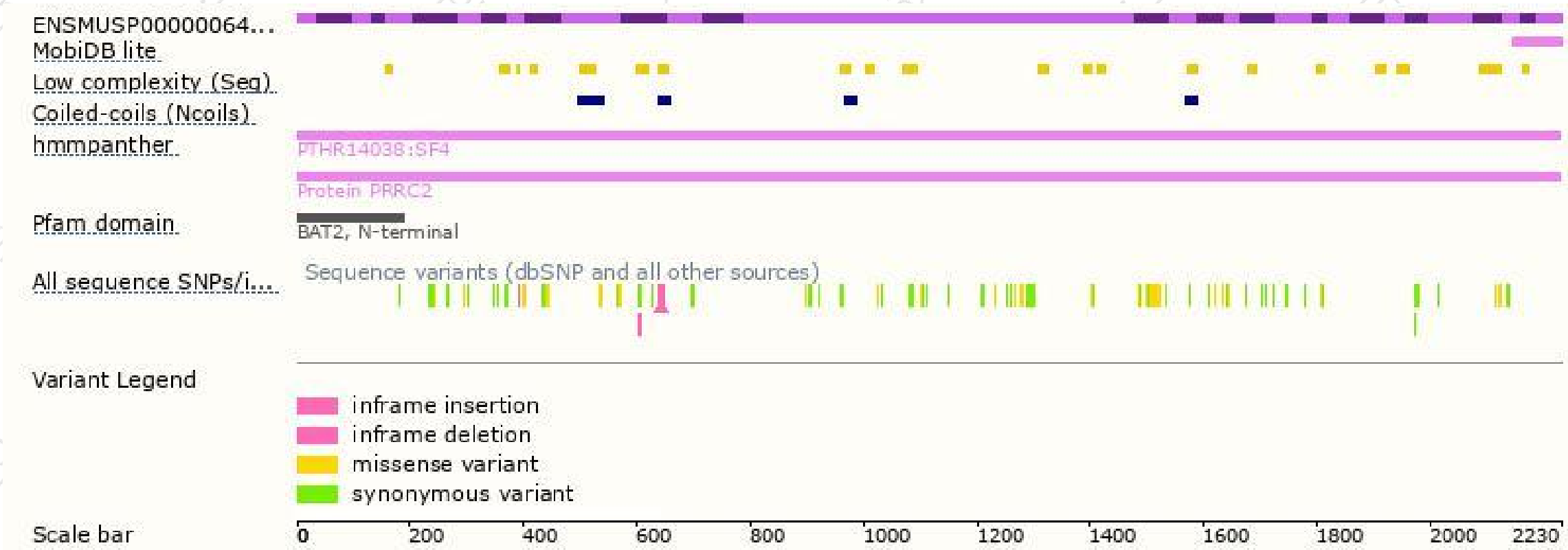


# Genomic location distribution





# 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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