# *Prdm2* Cas9-KO Strategy

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**Reviewer:** Jing Jin

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# Project Overview

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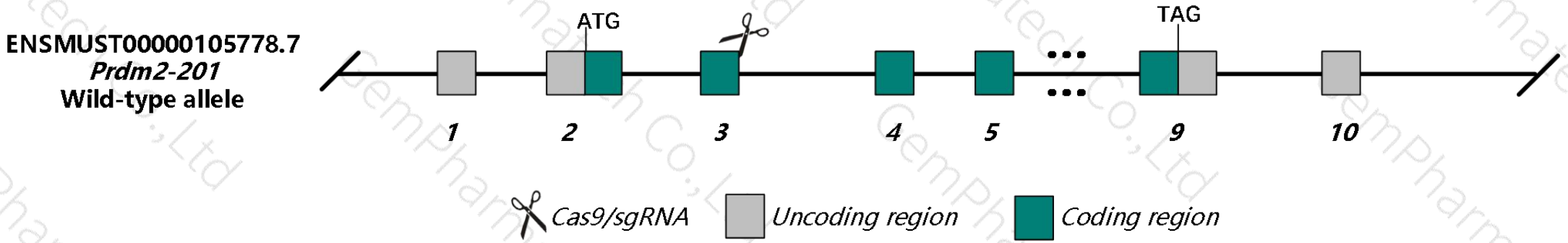
|---|---|
| **Project Name** | ***Prdm2*** |
| **Project type** | **Cas9-KO** |
| **Strain background** | **C57BL/6N** |

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prdm2* gene. The schematic diagram is as follows:



# Technical routes

- In this project we use CRISPR/Cas9 technology to modify *Prdm2* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6N 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/6N mice.

# Notice

- The *Prdm2* gene is located on the Chr8. 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）

集萃药康 GemPharmatech

## Prdm2 PR domain containing 2, with ZNF domain [ *Mus musculus* (house mouse) ]

Gene ID: 110593, updated on 12-Aug-2019

### Summary

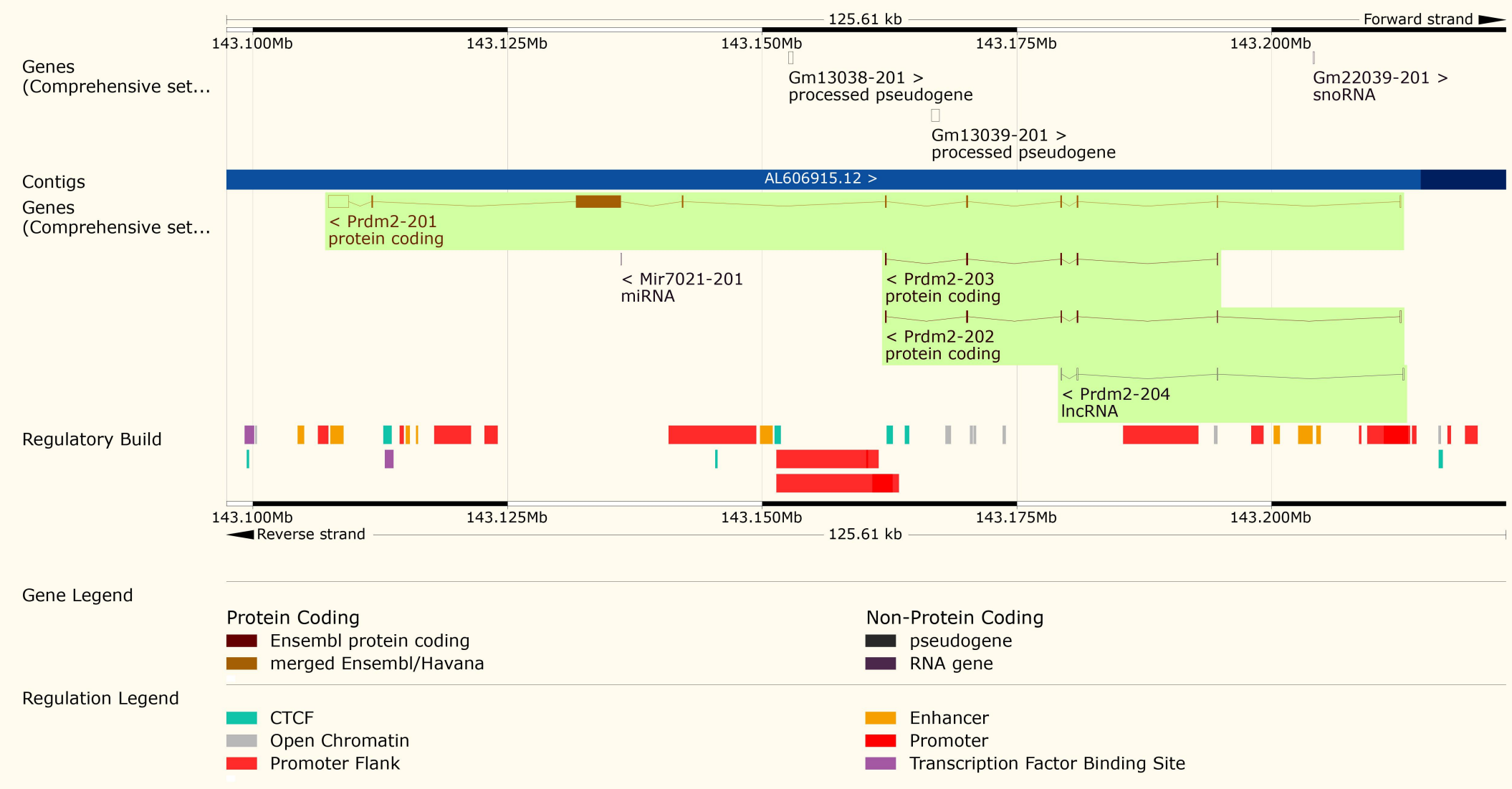
| | |
|---|---|
| **Official Symbol** | Prdm2 provided by MGI |
| **Official Full Name** | PR domain containing 2, with ZNF domain provided by MGI |
| **Primary source** | MGI:MGI:107628 |
| **See related** | Ensembl:ENSMUSG00000057637 |
| **Gene type** | protein coding |
| **RefSeq status** | VALIDATED |
| **Organism** | Mus musculus |
| **Lineage** | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| **Also known as** | Riz; KMT8; Riz1; Gm1033; Gm19732; Znfpr1c1; 4833427P12Rik; E330024L24Rik |
| **Expression** | Ubiquitous expression in testis adult (RPKM 8.9), limb E14.5 (RPKM 7.0) and 28 other tissues See more |
| **Orthologs** | human all |

# Transcript information（Ensembl）

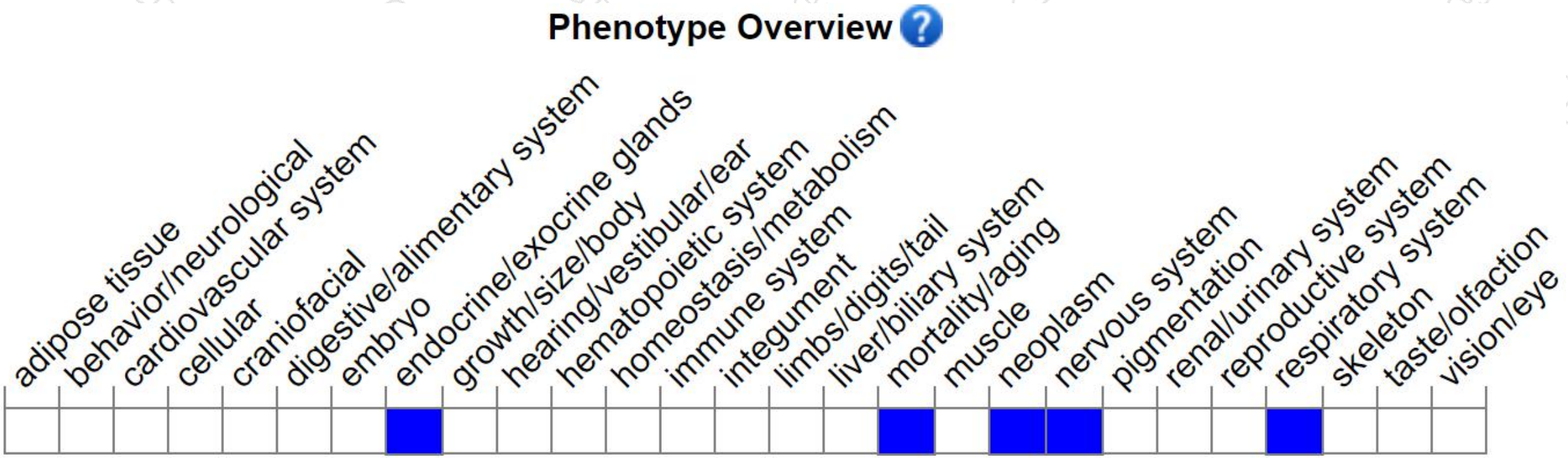
The gene has 4 transcripts,all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Translation ID | Biotype | CCDS | UniProt | Flags |
|---|---|---|---|---|---|---|---|---|
| Prdm2-201 | ENSMUST00000105778.7 | 7304 | 1709aa | ENSMUSP00000101404.1 | Protein coding | CCDS38942 | A2A7B5 | TSL:5 GENCODE basic APPRIS P1 |
| Prdm2-202 | ENSMUST00000134791.1 | 617 | 152aa | ENSMUSP00000116458.1 | Protein coding | - | Q8C2W5 | CDS 3' incomplete TSL:1 |
| Prdm2-203 | ENSMUST00000154280.7 | 574 | 169aa | ENSMUSP00000117741.1 | Protein coding | - | A2A7B7 | CDS 3' incomplete TSL:5 |
| Prdm2-204 | ENSMUST00000156909.1 | 347 | No protein | - | lncRNA | - | - | TSL:5 |

# Genomic location distribution



# Mouse phenotype description(MGI )




*Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(http://www.informatics.jax.org/).*

Homozygous null mice have shortened life spans, becoming moribund due to increased incidence of tumors. Mice had a broad spectrum of unusual tumors in multiple organs, with a high incidence of diffuse large B cell lymphomas.

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

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