

# ***Rnf212b* Cas9-KO Strategy**

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# Project Overview

**Project Name**

***Rnf212b***

**Project type**

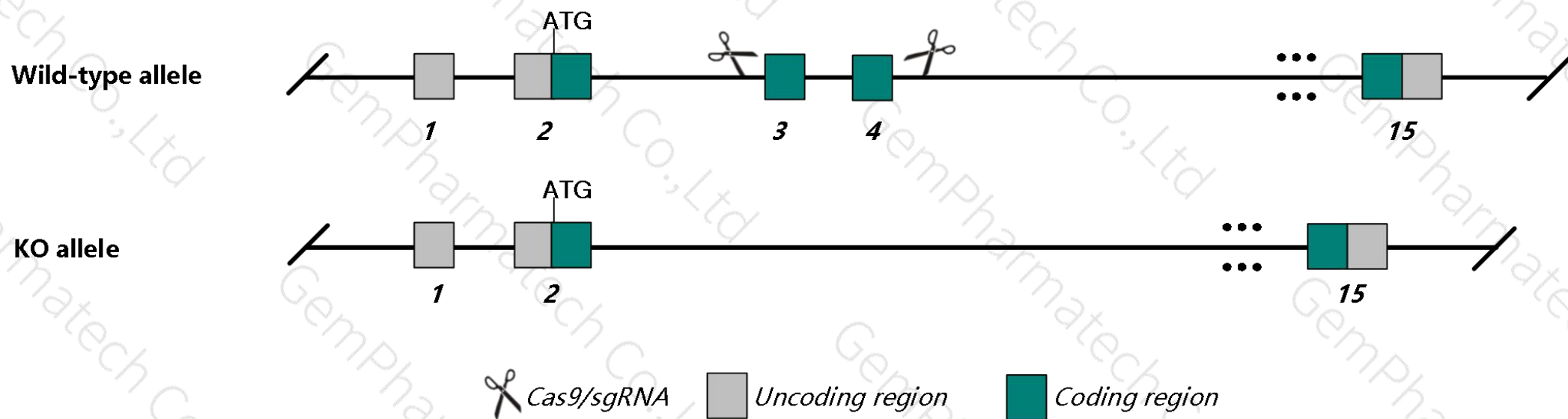
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnf212b* gene. The schematic diagram is as follows:



- The *Rnf212b* gene has 7 transcripts. According to the structure of *Rnf212b* gene, exon3-exon4 of *Rnf212b*-201 (ENSMUST00000218311.1) transcript is recommended as the knockout region. The region contains 128bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rnf212b* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9, sgRNA 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 *Rnf212b* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

# Gene information (NCBI)



## Rnf212b ring finger protein 212B [ *Mus musculus* (house mouse) ]

Gene ID: 102632837, updated on 26-Jun-2020

Summary

Official Symbol	Rnf212b provided by MGI
Official Full Name	ring finger protein 212B provided by MGI
Primary source	<a href="#">MGI:MGI-5589964</a>
See related	<a href="#">Ensembl:ENSMUSG00000112858</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm10332; Gm30805
Expression	Biased expression in kidney adult (RPKM 2.1), testis adult (RPKM 2.0) and 2 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

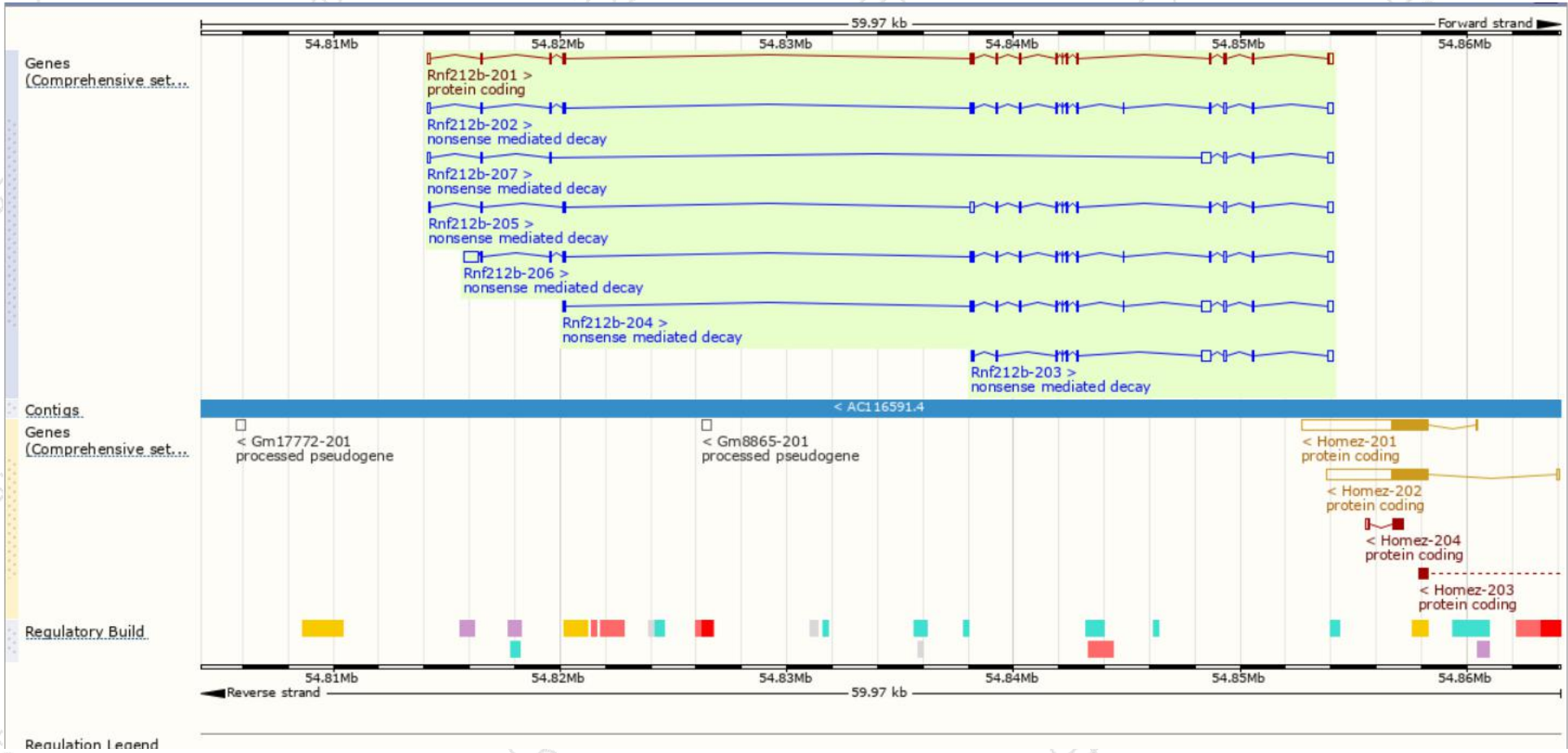
The gene has 7 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rnf212b-201	<a href="#">ENSMUST00000218311.1</a>	1201	<a href="#">297aa</a>	Protein coding	-	<a href="#">D3Z423</a>	TSL:5 GENCODE basic APPRIS P1
Rnf212b-206	<a href="#">ENSMUST00000220208.1</a>	1719	<a href="#">212aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P6W2</a>	TSL:5
Rnf212b-204	<a href="#">ENSMUST00000219519.2</a>	1317	<a href="#">161aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P826</a>	CDS 5' incomplete TSL:5
Rnf212b-202	<a href="#">ENSMUST00000219350.1</a>	1233	<a href="#">212aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P6W2</a>	TSL:5
Rnf212b-203	<a href="#">ENSMUST00000219496.1</a>	1143	<a href="#">79aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P7V7</a>	CDS 5' incomplete TSL:5
Rnf212b-205	<a href="#">ENSMUST00000220122.1</a>	1095	<a href="#">53aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P7N9</a>	TSL:5
Rnf212b-207	<a href="#">ENSMUST00000220403.1</a>	1092	<a href="#">57aa</a>	Nonsense mediated decay	-	<a href="#">A0A1W2P7Z7</a>	TSL:5

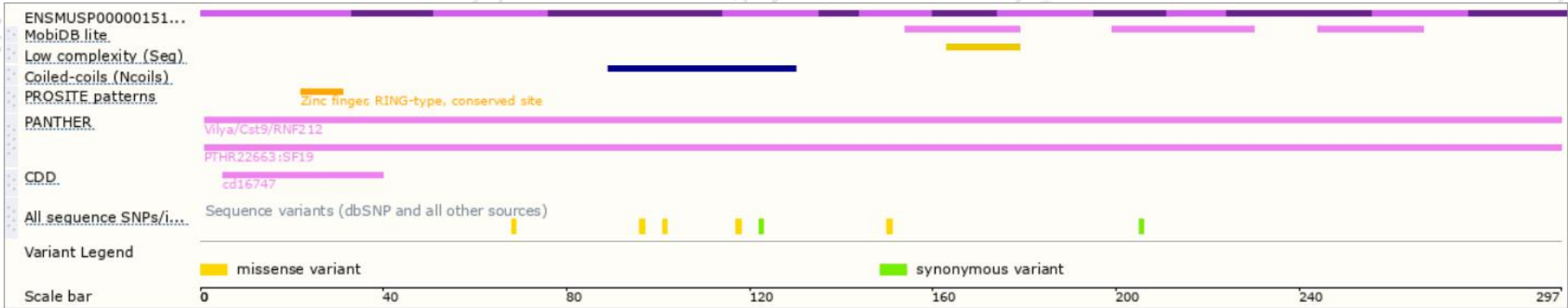
The strategy is based on the design of *Rnf212b*-201 transcript, The transcription is shown below:



# Genomic location distribution



# Protein domain



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