

Prr12 Cas9-CKO Strategy

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Overview

Target Gene Name

- Prr12

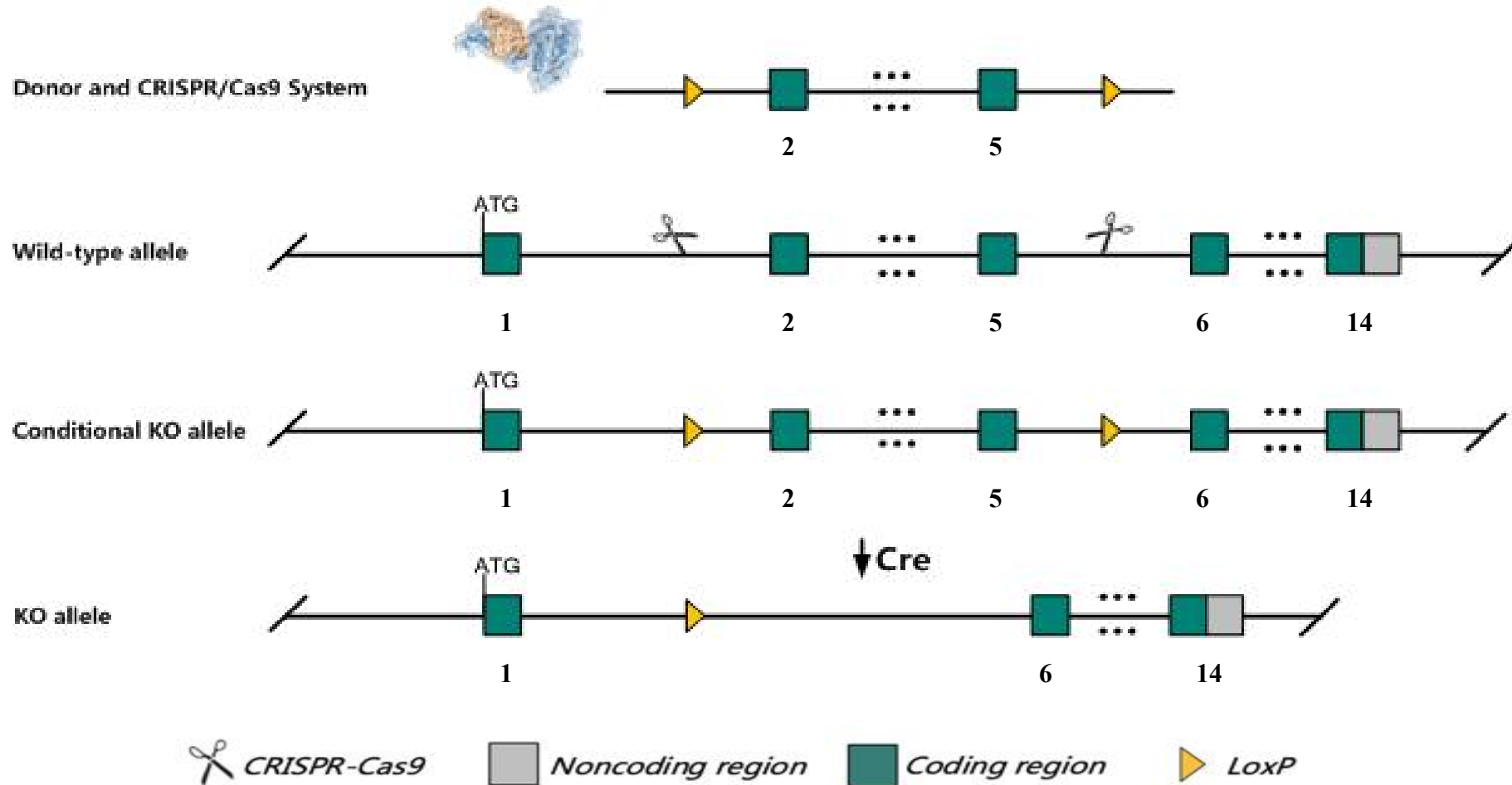
Project Type

- Cas9-CKO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Schematic representation of CRISPR-Cas9 engineering used to edit the *Prr12* gene.

Technical Information

- The *Prr12* gene has 2 transcripts. According to the structure of *Prr12* gene, exon2-exon5 of *Prr12*-201 (ENSMUST00000057293.8) transcript is recommended as the knockout region. The region contains 4232bp coding sequence. Knocking out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Prr12* gene. The brief process is as follows: CRISPR-Cas9 system 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.
- The flox mice will be 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.

Gene Information

Prr12 proline rich 12 [*Mus musculus* (house mouse)]

[Download Datasets](#)

Gene ID: 233210, updated on 24-Sep-2025

Summary

Official Symbol Prr12 provided by [MGI](#)
Official Full Name proline rich 12 provided by [MGI](#)
Primary source [MGI:MGI:2679002](#)
See related [Ensembl:ENSMUSG00000046574](#) [AllianceGenome:MGI:2679002](#)
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 6720469B10
Summary Predicted to enable DNA binding activity. Predicted to be located in neuron projection; nucleus; and postsynaptic density. Is expressed in central nervous system and retina. Orthologous to human PRR12 (proline rich 12). [provided by Alliance of Genome Resources, Jul 2025]
Expression Ubiquitous expression in thymus adult (RPKM 11.0), adrenal adult (RPKM 9.5) and 27 other tissues [See more](#)
Orthologs [human](#) [all](#)
NEW Try the new [Gene table](#)
Try the new [Transcript table](#)

Source: <https://www.ncbi.nlm.nih.gov/>

Transcript Information

The gene has 2 transcripts, all transcripts are shown below:

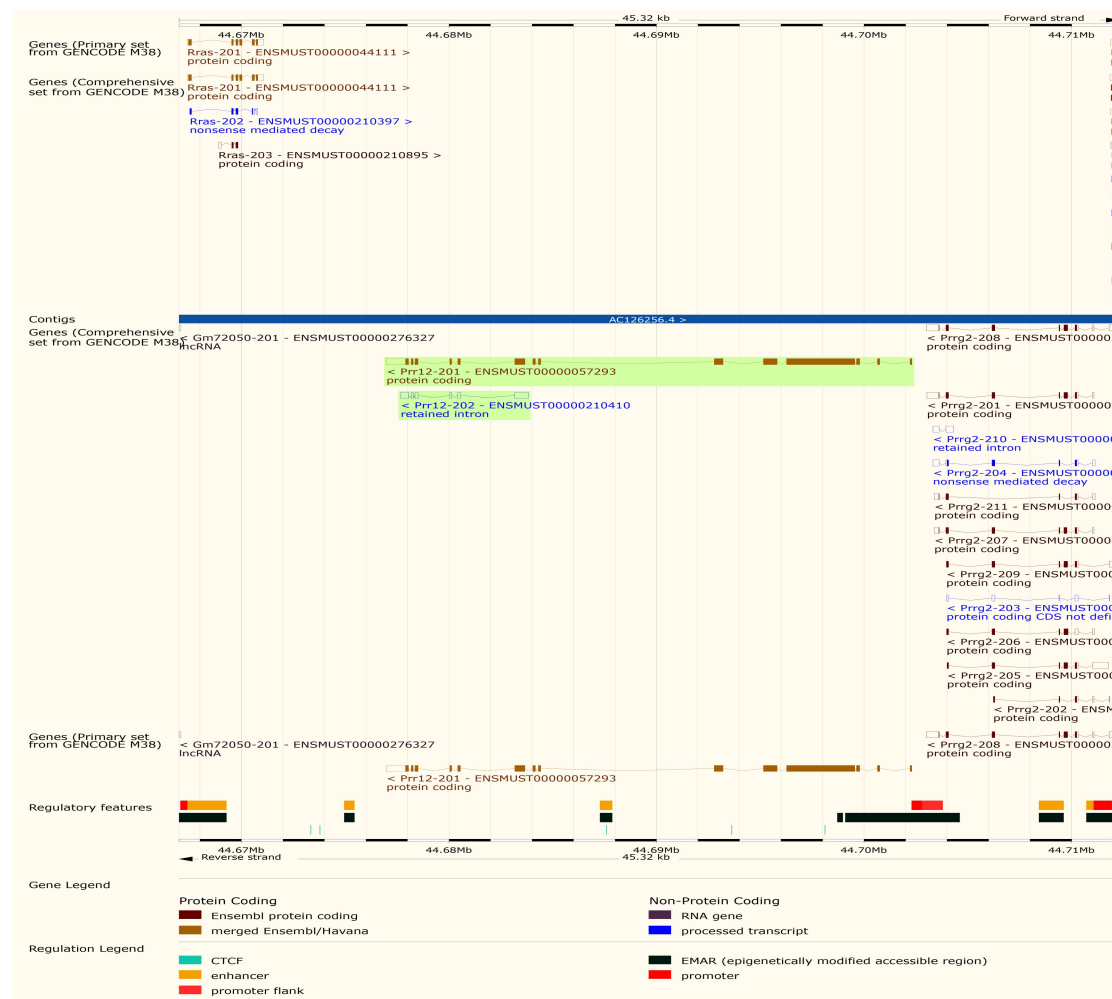
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000057293.8	Prr12-201	7023	2035aa	Protein coding	CCDS52241	E9PYL2	Ensembl Canonical Gencode Primary Gencode Basic APPRIS P1 TSL:5
ENSMUST00000210410.2	Prr12-202	1487	No protein	Retained intron		-	TSL:1

The strategy is based on the design of *Prr12-201* transcript, the transcription is shown below:

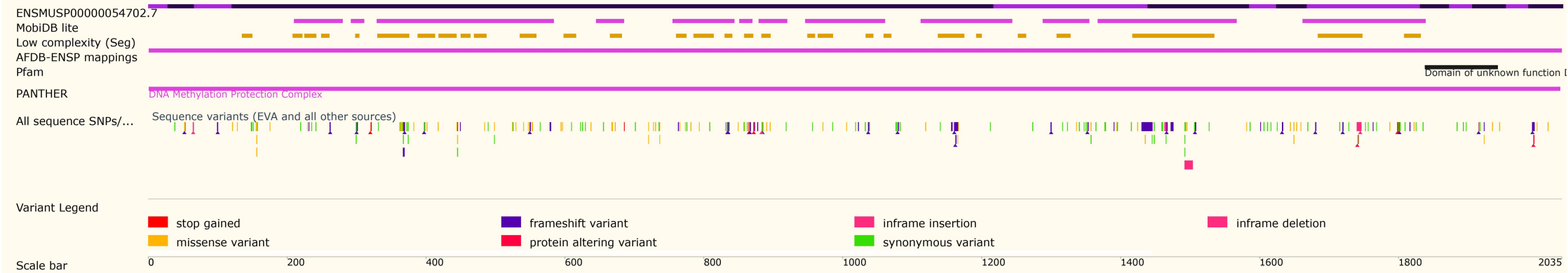


Source: <https://www.ensembl.org>

Genomic Information



Protein Information



Important Information

- *Prr12* is located on Chr7. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is 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 the existing technology level.
- A part of amino acid sequence will still remain at the N-terminal of *Prr12*-201, and the effect is unknown
- The flox region is about 1.5 kb away from the 3' of the *Prrg2* -201 gene, which may affect the regulation of this gene.
- The flox region is about 6.5 kb and the efficiency of Cre may be reduced.