

Prkrip1 Cas9-CKO Strategy

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Project Overview

Project Name

Prkrip1

Project type

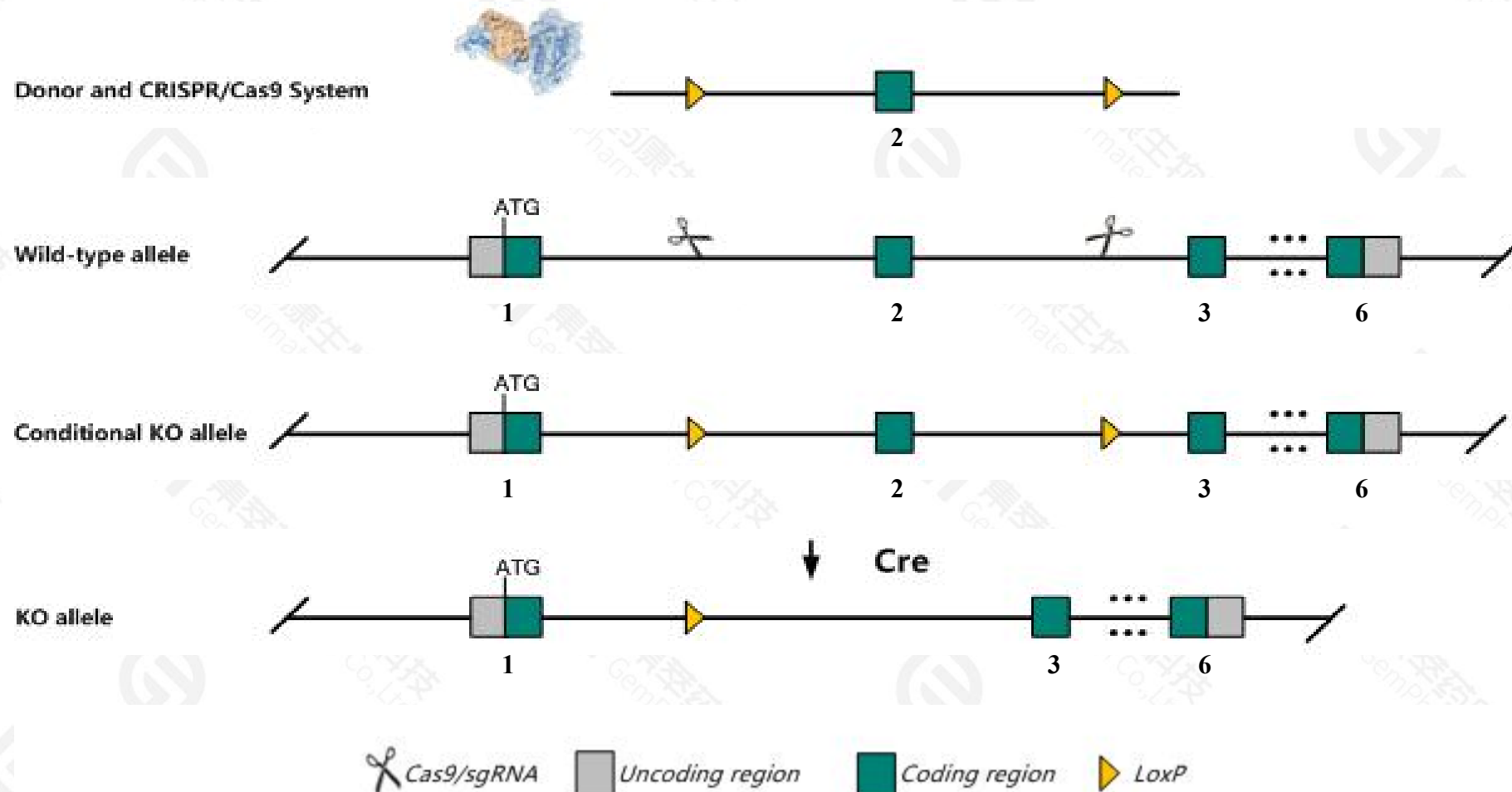
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Prkrip1* gene. The schematic diagram is as follows:



Technical routes

- The *Prkrip1* gene has 4 transcripts. According to the structure of *Prkrip1* gene, exon2 of *Prkrip1*-204(ENSMUST00000151786.8) transcript is recommended as the knockout region. The region contains 79bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Prkrip1* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor 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 *Prkrip1* gene is located on the Chr5. 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)

Prkrip1 Prkr interacting protein 1 (IL11 inducible) [Mus musculus (house mouse)]

Gene ID: 66801, updated on 25-Sep-2020

Summary



Official Symbol Prkrip1 provided by [MGI](#)

Official Full Name Prkr interacting protein 1 (IL11 inducible) provided by [MGI](#)

Primary source [MGI:MGI:1914051](#)

See related [Ensembl:ENSMUSG00000039737](#)

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 8430424D23Rik, C114

Expression Ubiquitous expression in CNS E11.5 (RPKM 10.0), CNS E14 (RPKM 7.3) and 28 other tissues [See more](#)

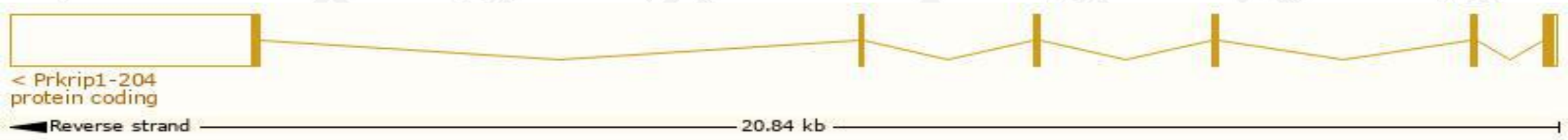
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

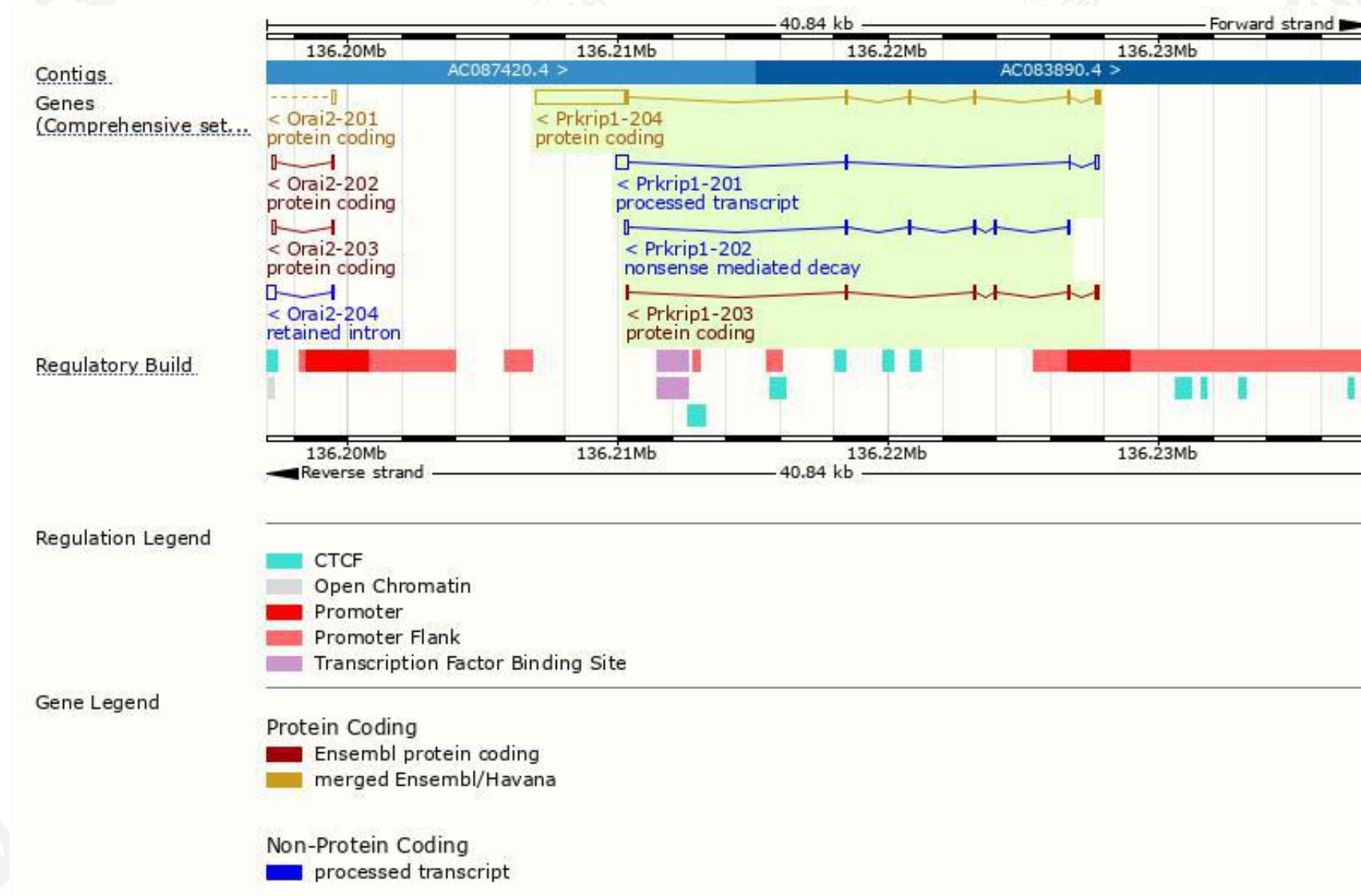
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Prkrip1-204	ENSMUST00000151786.8	3893	186aa	Protein coding	CCDS19754		TSL:1 , GENCODE basic , APPRIS P1 ,
Prkrip1-203	ENSMUST00000149151.2	505	165aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Prkrip1-202	ENSMUST00000123921.8	447	83aa	Nonsense mediated decay	-		CDS 5' incomplete , TSL:3 ,
Prkrip1-201	ENSMUST00000040980.12	626	No protein	Processed transcript	-		TSL:5 ,

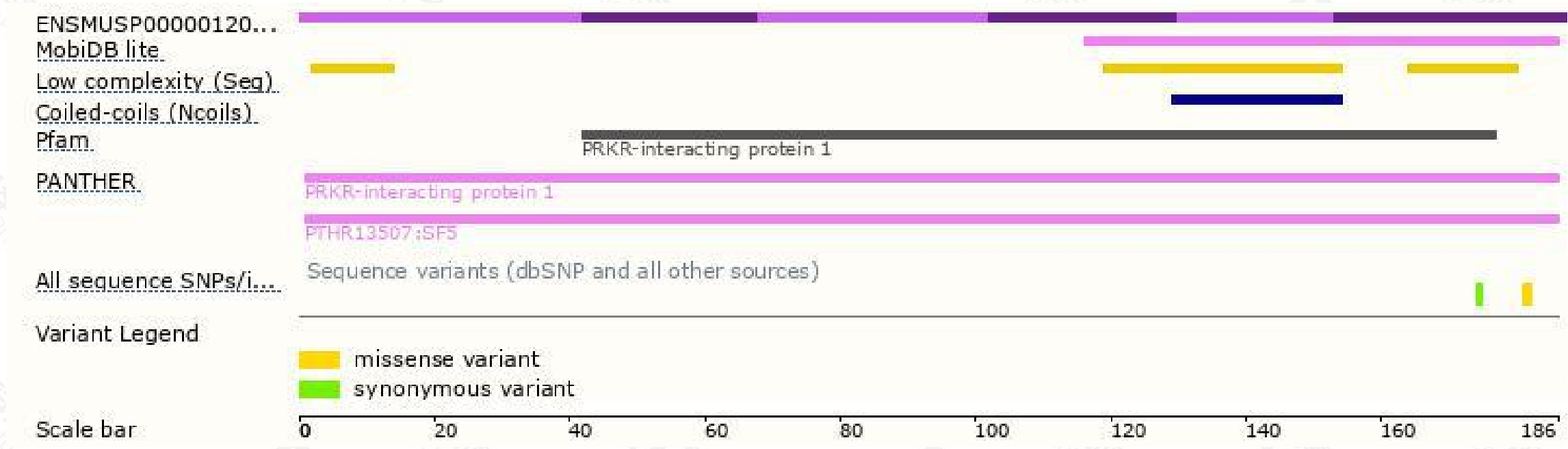
The strategy is based on the design of *Prkrip1-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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