

Parp9 Cas9-CKO Strategy

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Project Overview

Project Name

Parp9

Project type

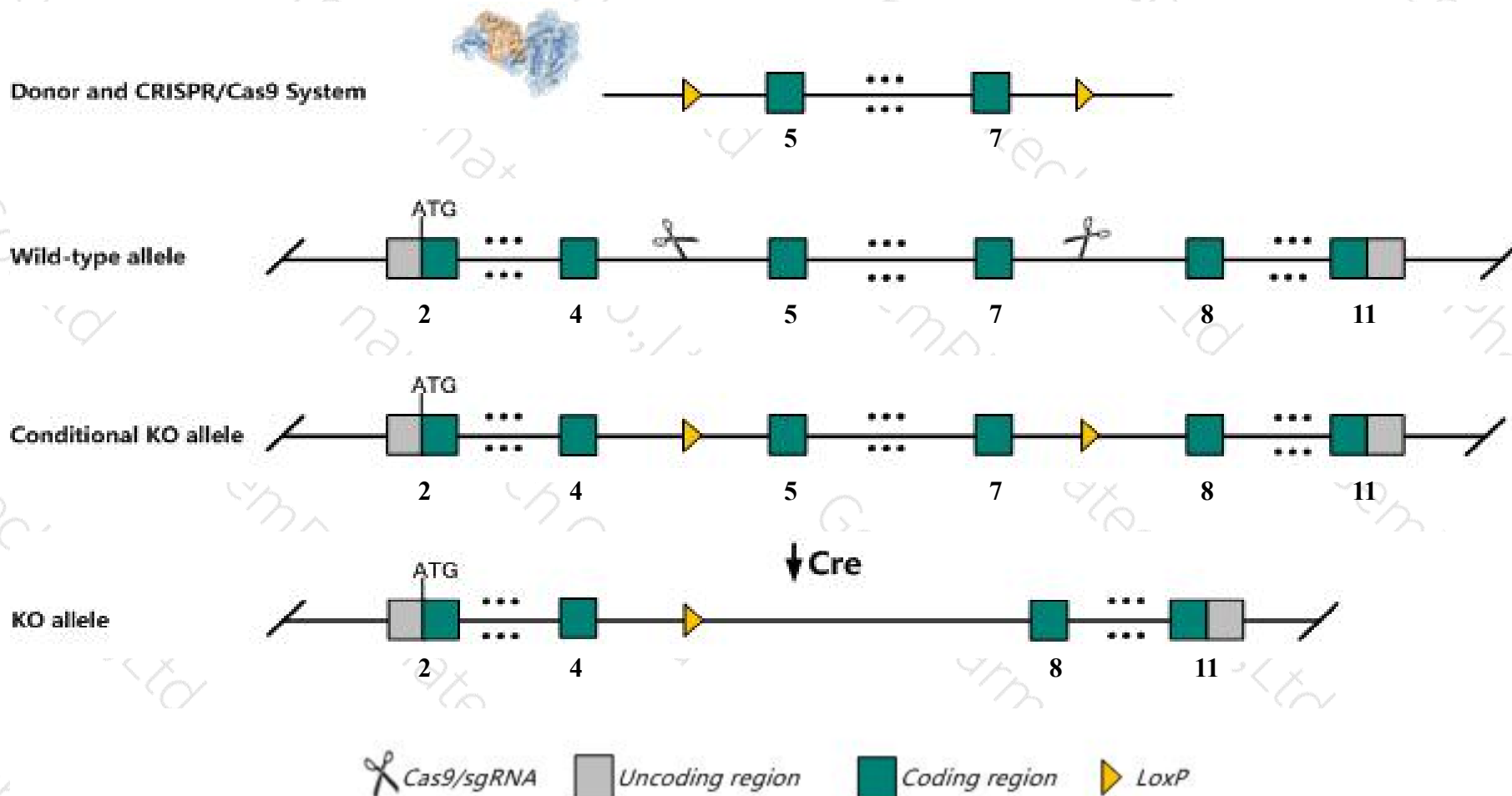
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Parp9* gene. The schematic diagram is as follows:



- The *Parp9* gene has 7 transcripts. According to the structure of *Parp9* gene, exon5-exon7 of *Parp9*-203(ENSMUST00000114878.7) transcript is recommended as the knockout region. The region contains 493bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Parp9* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector 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 *Parp9* gene is located on the Chr16. 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.
- The N-terminal of *Parp9* gene will remain several amino acids ,it may remain the partial function of *Parp9* gene.
- 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)

Parp9 poly (ADP-ribose) polymerase family, member 9 [Mus musculus (house mouse)]

Gene ID: 80285, updated on 13-Mar-2020

Summary



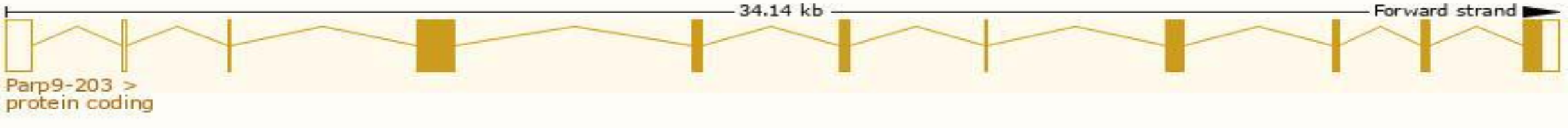
Official Symbol	Parp9 provided by MGI
Official Full Name	poly (ADP-ribose) polymerase family, member 9 provided by MGI
Primary source	MGI:MGI:1933117
See related	Ensembl:ENSMUSG00000022906
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	ARTD9, AW214463, BC003281, Bagl, Bal, PARP-9
Expression	Ubiquitous expression in large intestine adult (RPKM 7.9), liver E18 (RPKM 7.8) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

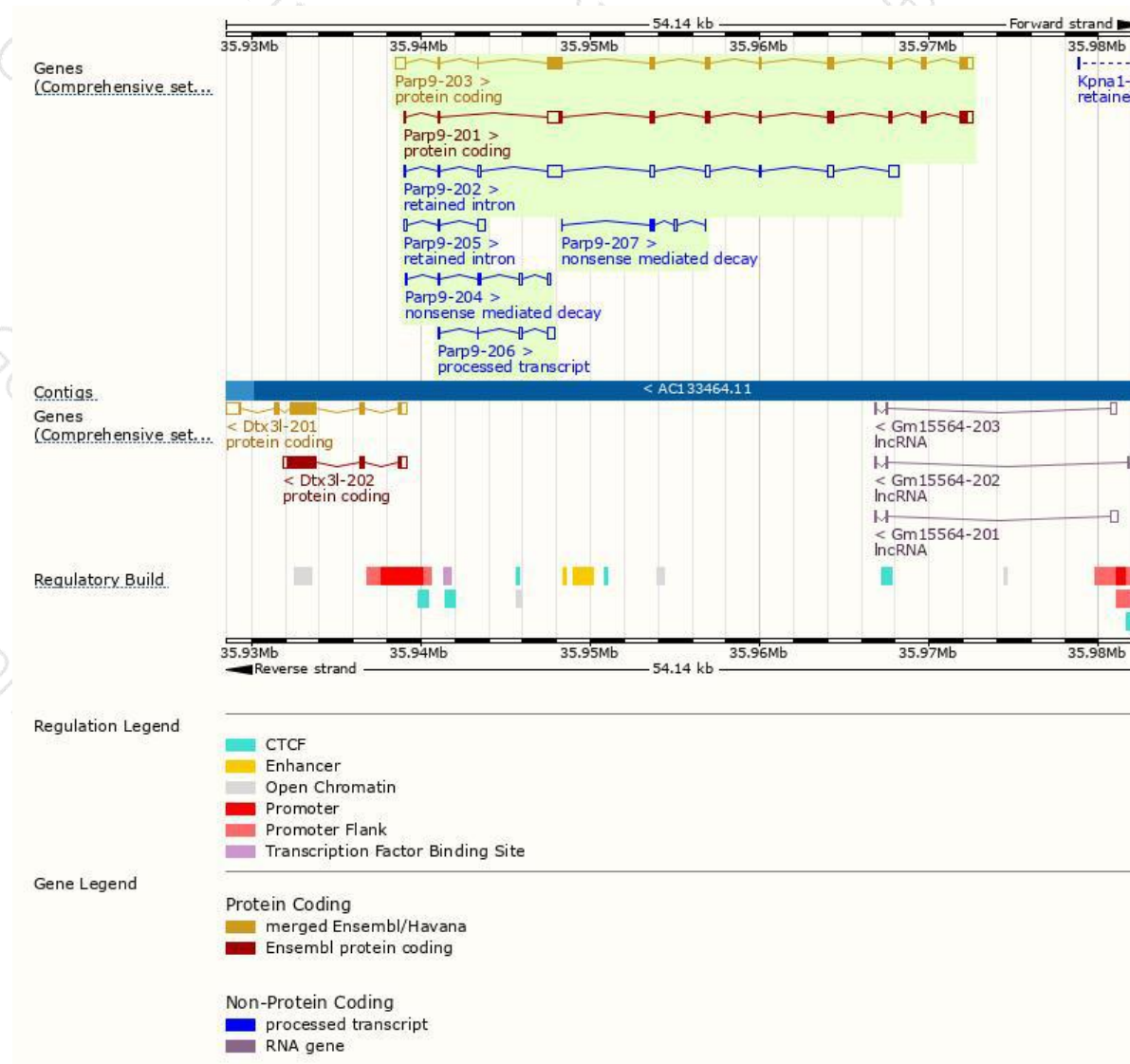
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Parp9-203	ENSMUST00000114878.7	3548	830aa	Protein coding	CCDS37326	Q8CAS9	TSL:1 GENCODE basic APPRIS P1
Parp9-201	ENSMUST00000023622.12	2973	597aa	Protein coding	-	H7BWY5	TSL:1 GENCODE basic
Parp9-204	ENSMUST00000122870.1	761	58aa	Nonsense mediated decay	-	E0CYZ7	TSL:3
Parp9-207	ENSMUST00000159160.1	468	104aa	Nonsense mediated decay	-	F6U1Y8	CDS 5' incomplete TSL:3
Parp9-206	ENSMUST00000153066.1	742	No protein	Processed transcript	-	-	TSL:3
Parp9-202	ENSMUST00000114877.7	2608	No protein	Retained intron	-	-	TSL:1
Parp9-205	ENSMUST00000128878.7	717	No protein	Retained intron	-	-	TSL:3

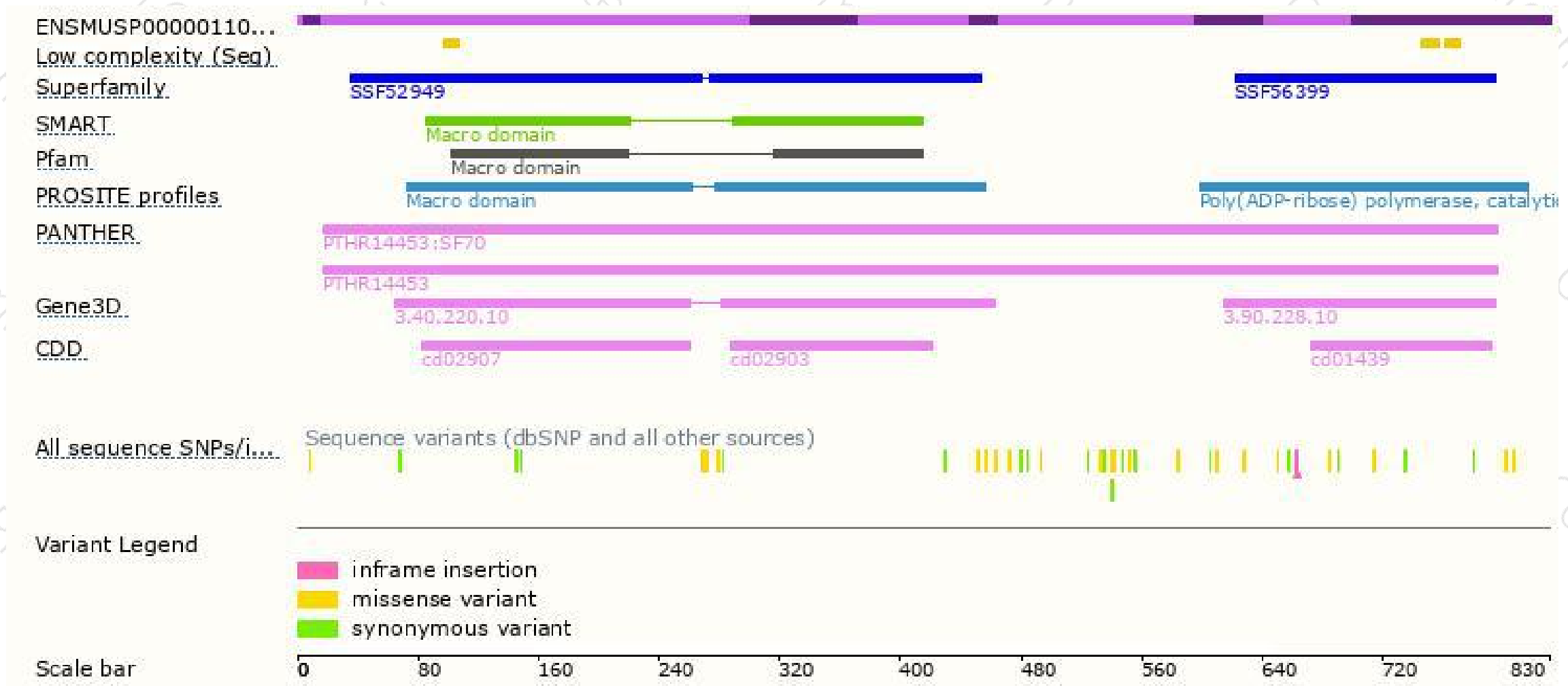
The strategy is based on the design of *Parp9-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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