

Pdzrn4 Cas9-CKO Strategy

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Project Overview

Project Name

Pdzrn4

Project type

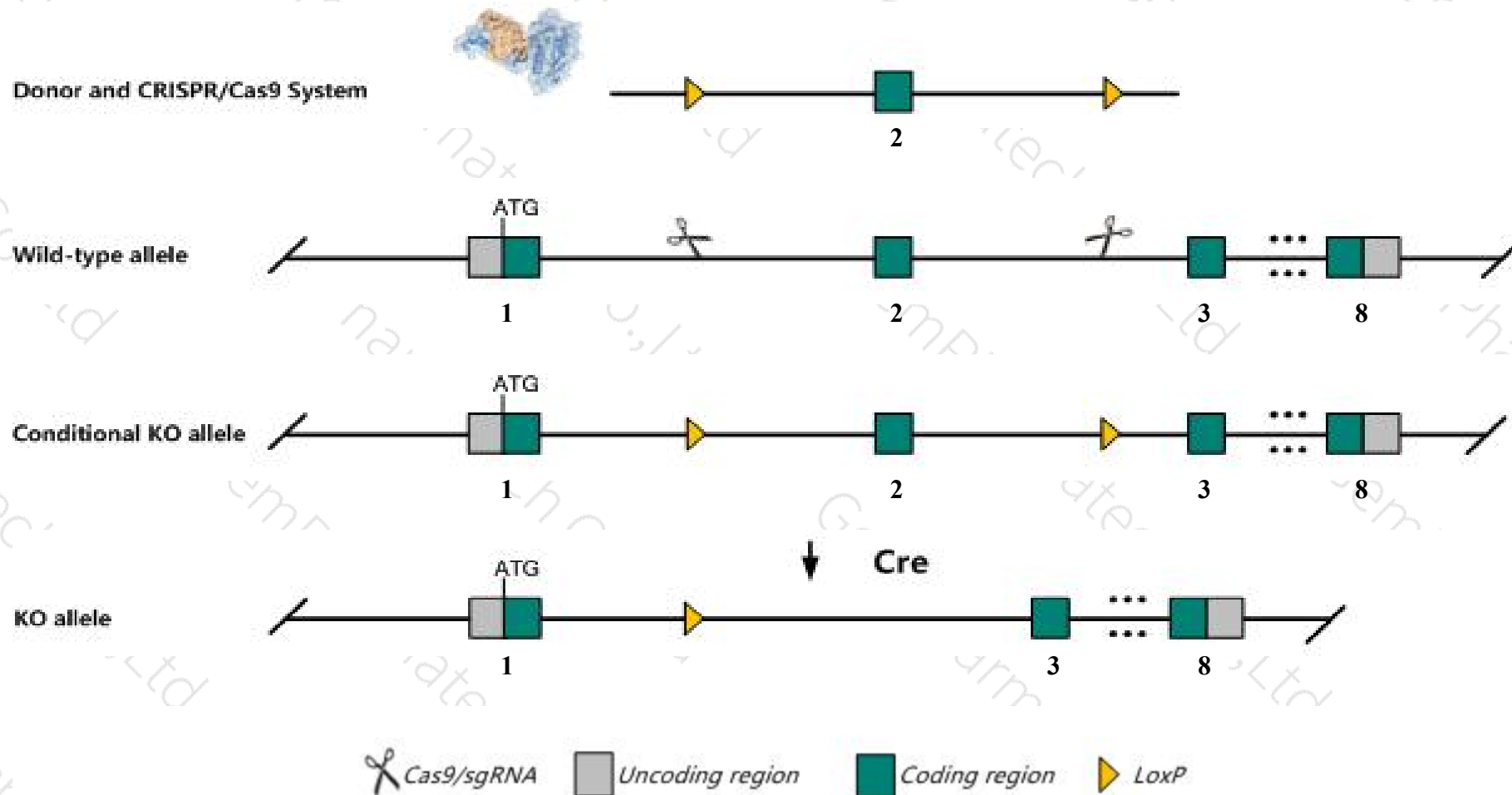
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pdzrn4* gene. The schematic diagram is as follows:



Technical routes

- The *Pdzrn4* gene has 4 transcripts. According to the structure of *Pdzrn4* gene, exon2 of *Pdzrn4-201*(ENSMUST00000035399.9) transcript is recommended as the knockout region. The region contains 257bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pdzrn4* 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 *Pdzrn4* gene is located on the Chr15. 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)

Pdzn4 PDZ domain containing RING finger 4 [*Mus musculus* (house mouse)]

Gene ID: 239618, updated on 25-Sep-2020

Summary

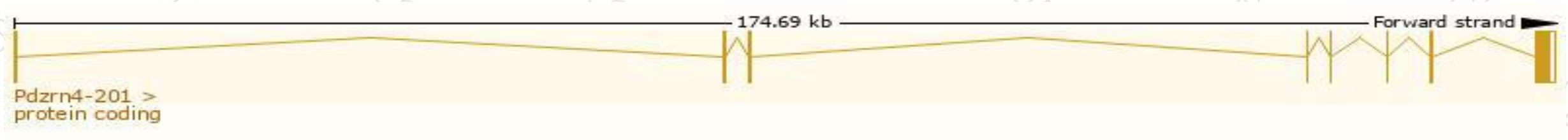
Official Symbol	Pdzn4 provided by MGI
Official Full Name	PDZ domain containing RING finger 4 provided by MGI
Primary source	MGI:MGI:3056996
See related	Ensembl:ENSMUSG000000036218
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	LN; SAM; LNX4; SAMCAP3L; mKIAA3027; 1110017D07Rik
Expression	Biased expression in CNS E14 (RPKM 3.1), whole brain E14.5 (RPKM 2.7) and 10 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

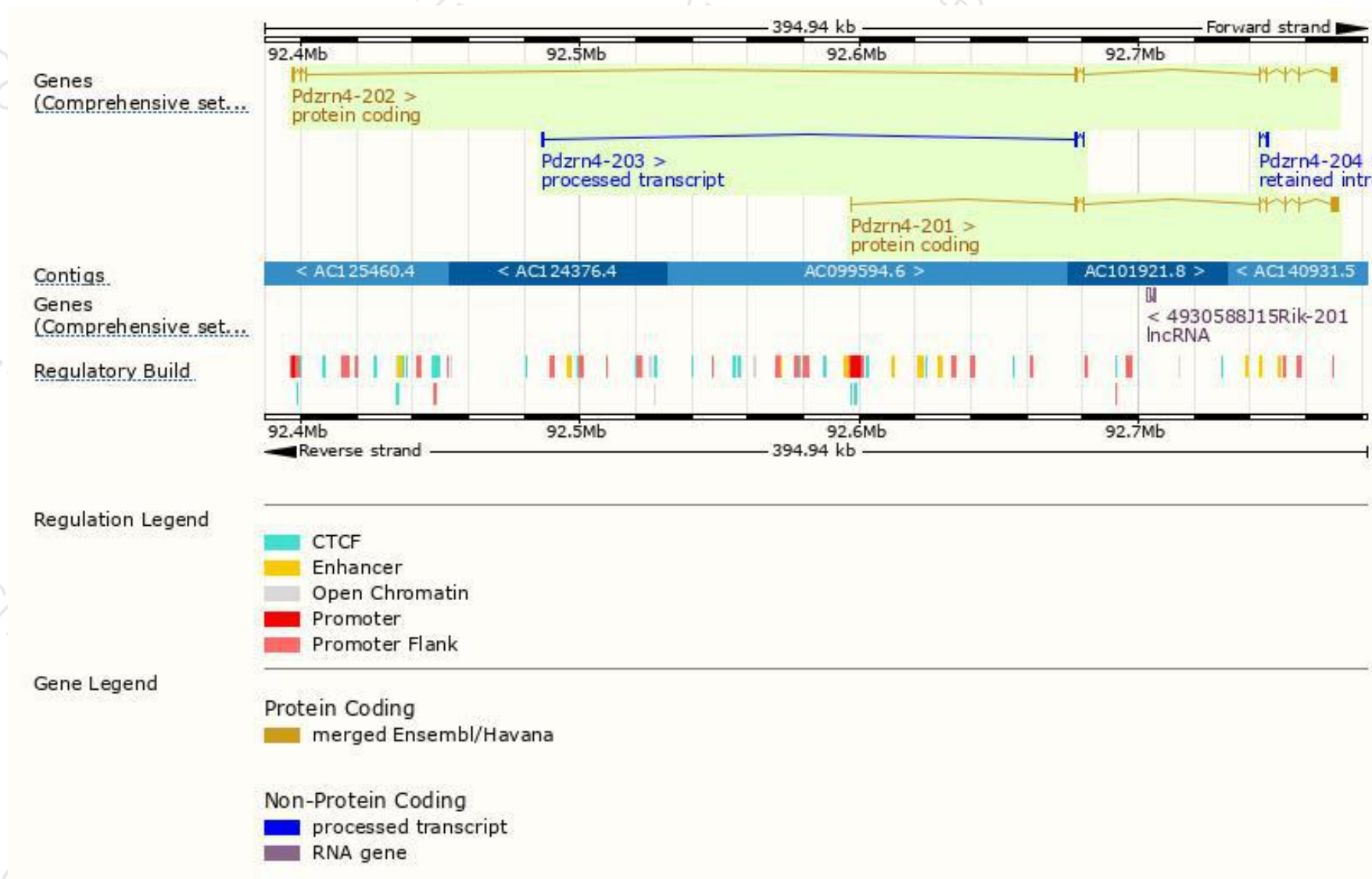
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pdzrn4-201	ENSMUST00000035399.9	3376	775aa	Protein coding	CCDS49710	E9Q5P6	TSL:1 GENCODE basic
Pdzrn4-202	ENSMUST00000169942.9	3102	1014aa	Protein coding	CCDS49709	E9PUZ9	TSL:1 GENCODE basic APPRIS P1
Pdzrn4-203	ENSMUST00000229173.1	502	No protein	Processed transcript	-	-	
Pdzrn4-204	ENSMUST00000229577.1	485	No protein	Retained intron	-	-	

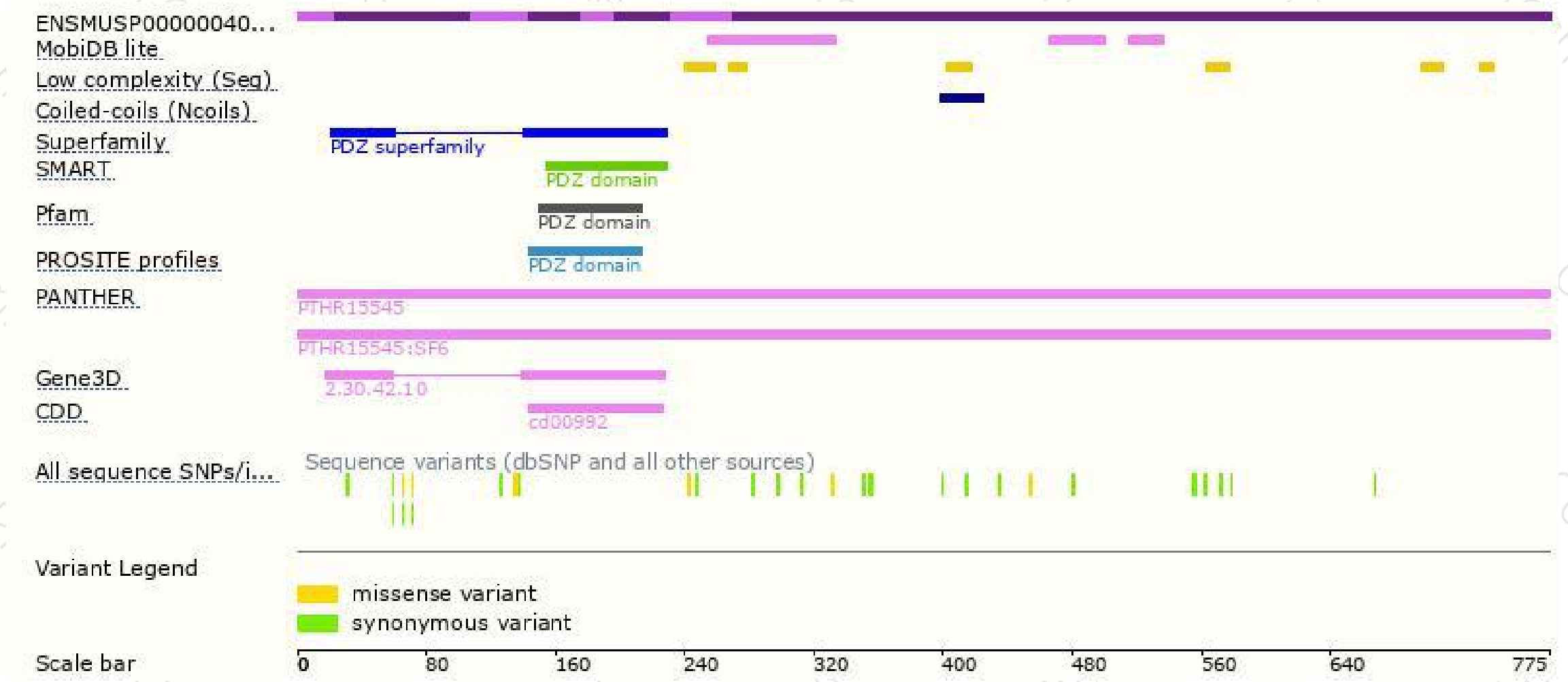
The strategy is based on the design of *Pdzrn4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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