

Pdzrn3 Cas9-CKO Strategy

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Project Overview

Project Name

Pdzrn3

Project type

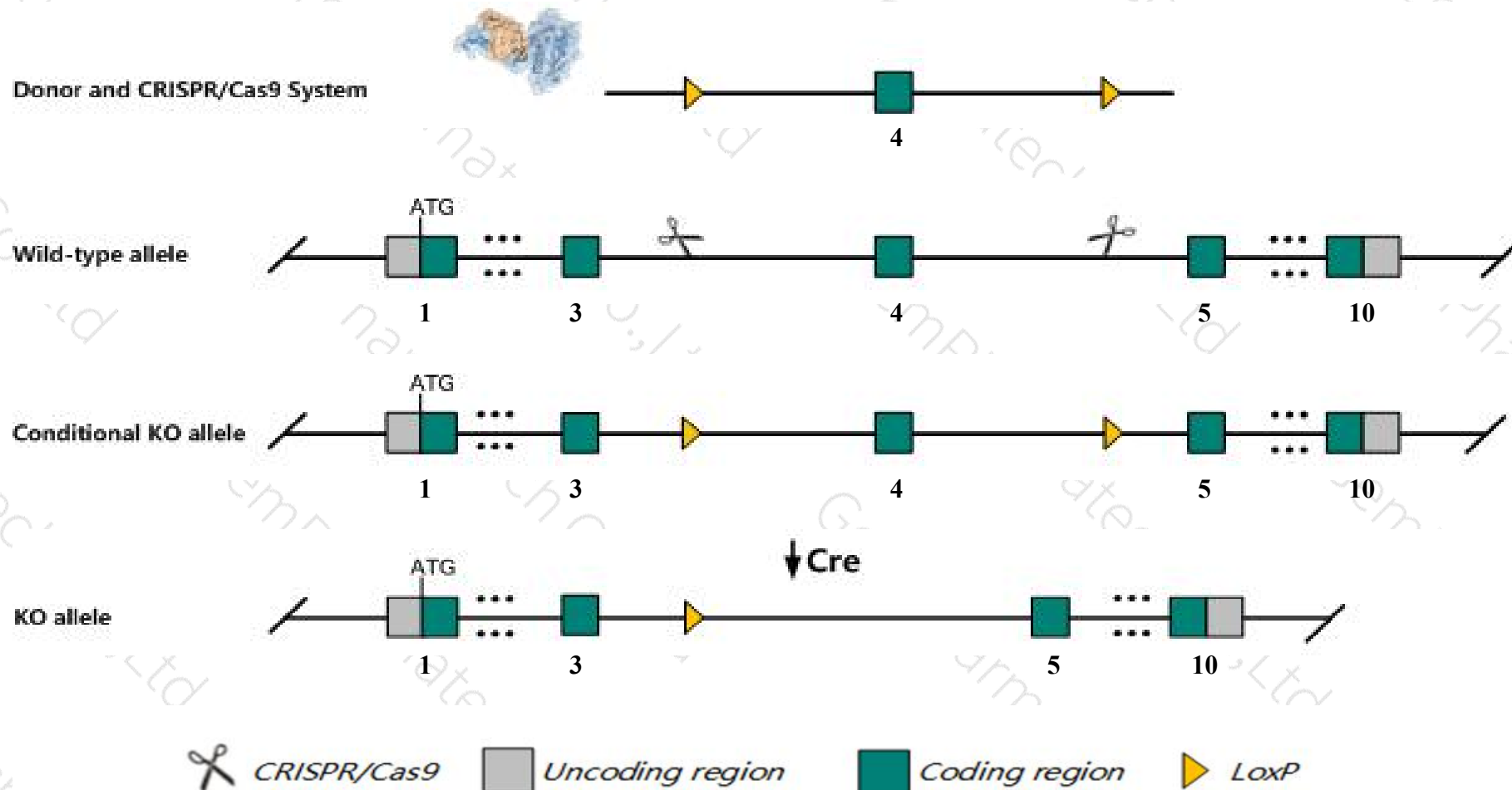
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pdzn3* gene. The schematic diagram is as follows:



- The *Pdzrn3* gene has 5 transcripts. According to the structure of *Pdzrn3* gene, exon4 of *Pdzrn3*-201(ENSMUST00000075994.10) transcript is recommended as the knockout region. The region contains 248bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pdzrn3* 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 sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- 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.

- The *Pdzn3* gene is located on the Chr6. 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- The flox region is in the intron of the Gm26911 gene, which may affect the regulation of this 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)

Pdzn3 PDZ domain containing RING finger 3 [Mus musculus (house mouse)]

Gene ID: 55983, updated on 13-Mar-2020

Summary



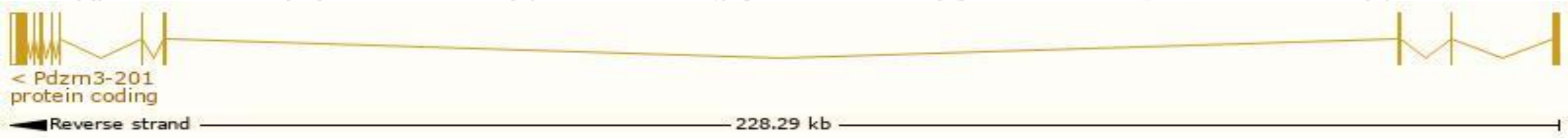
Official Symbol	Pdzn3 provided by MGI
Official Full Name	PDZ domain containing RING finger 3 provided by MGI
Primary source	MGI:MGI:1933157
See related	Ensembl:ENSMUSG00000035357
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110020C07Rik, AI429718, AL023082, LNX3, SEMACAP3, Semcap3
Expression	Broad expression in bladder adult (RPKM 23.0), ovary adult (RPKM 19.2) and 21 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

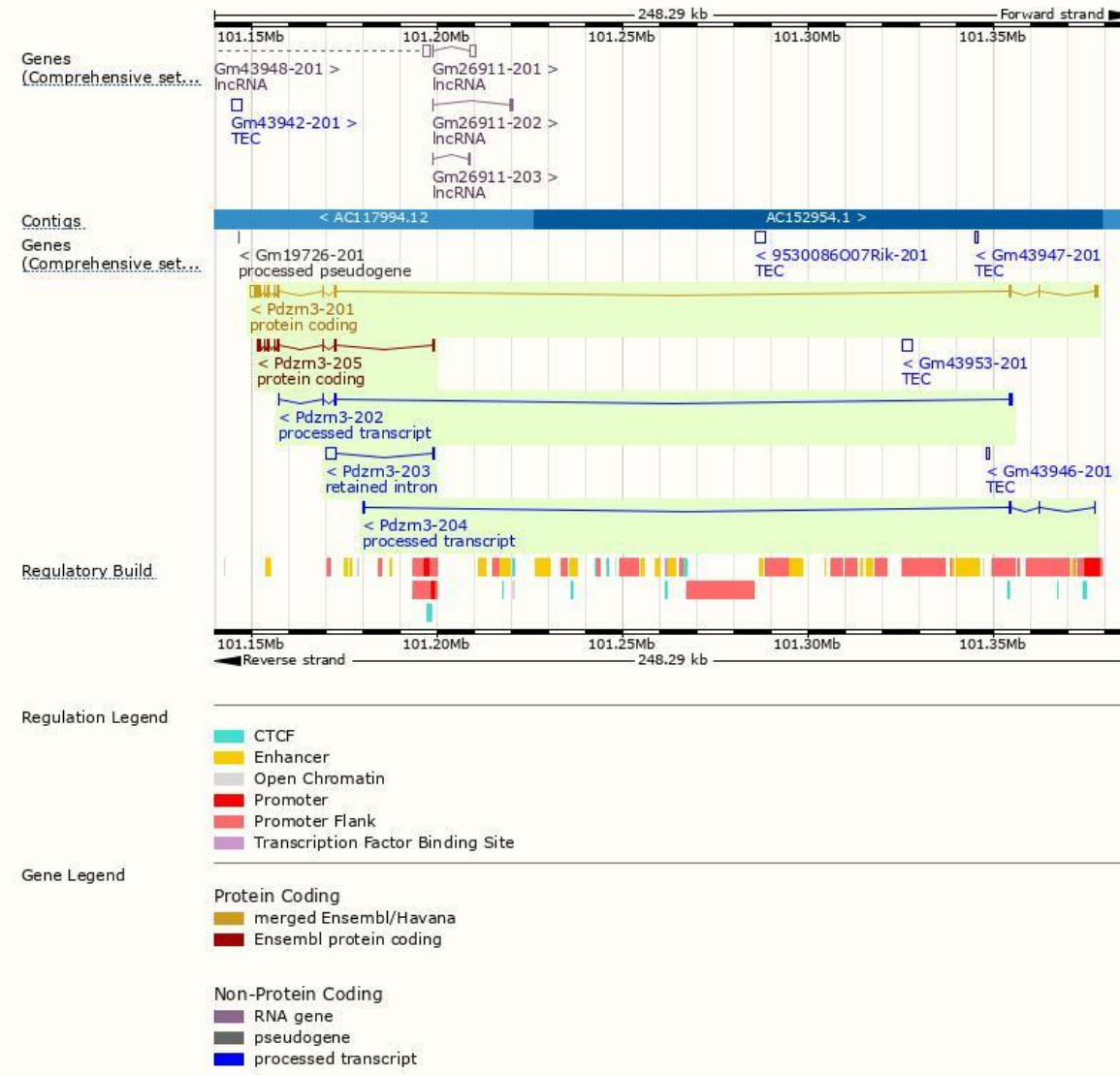
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pdzn3-201	ENSMUST00000075994.10	4104	1063aa	Protein coding	CCDS20392	Q69Z50	TSL:1 GENCODE basic APPRIS P1
Pdzn3-205	ENSMUST000000239140.1	1808	504aa	Protein coding	-	-	CDS 3' incomplete
Pdzn3-202	ENSMUST000000124884.3	666	No protein	Processed transcript	-	-	TSL:3
Pdzn3-204	ENSMUST000000151175.2	621	No protein	Processed transcript	-	-	TSL:1
Pdzn3-203	ENSMUST000000144505.1	2969	No protein	Retained intron	-	-	TSL:1

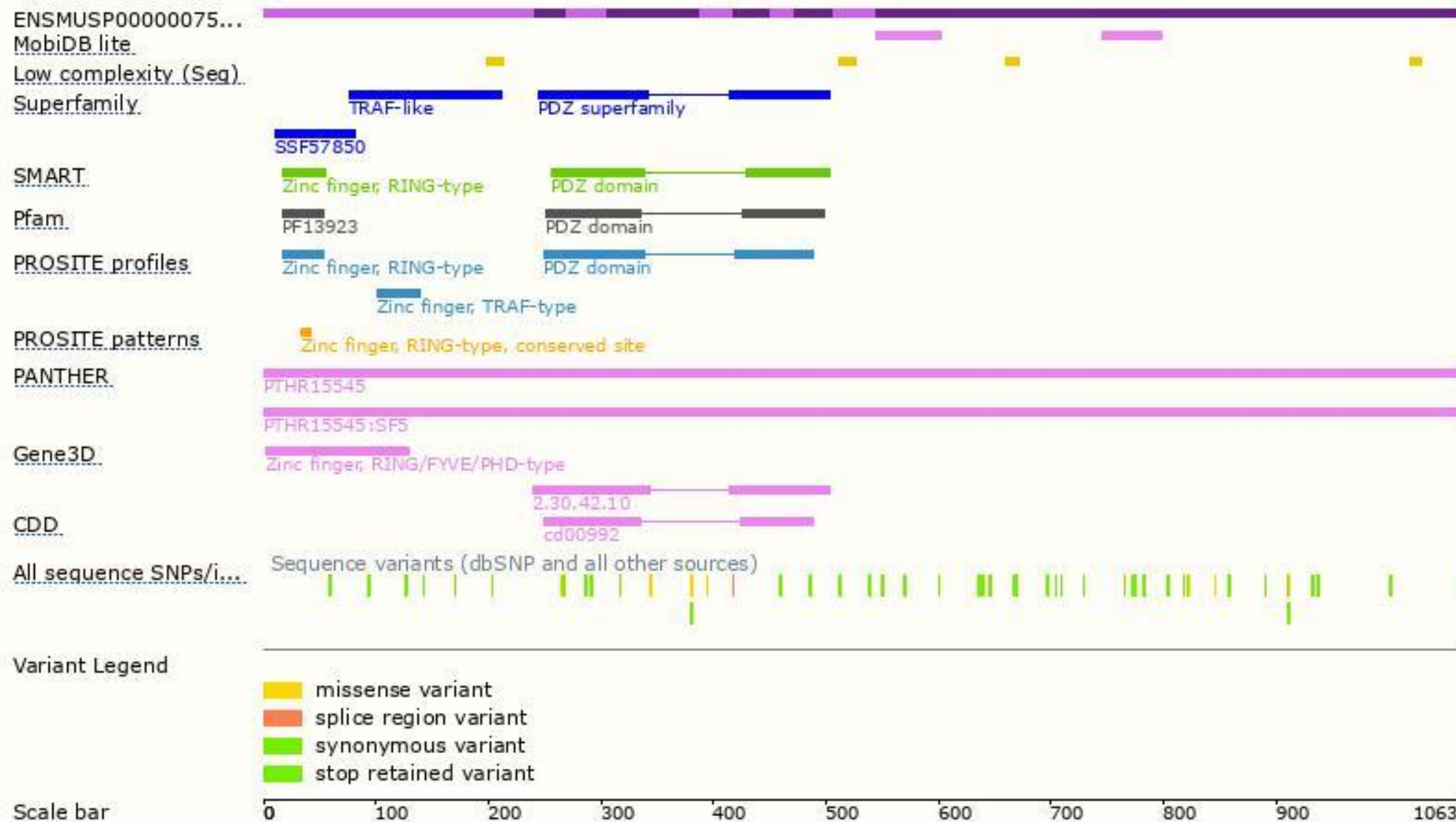
The strategy is based on the design of *Pdzn3-201* transcript,the transcription is shown below:



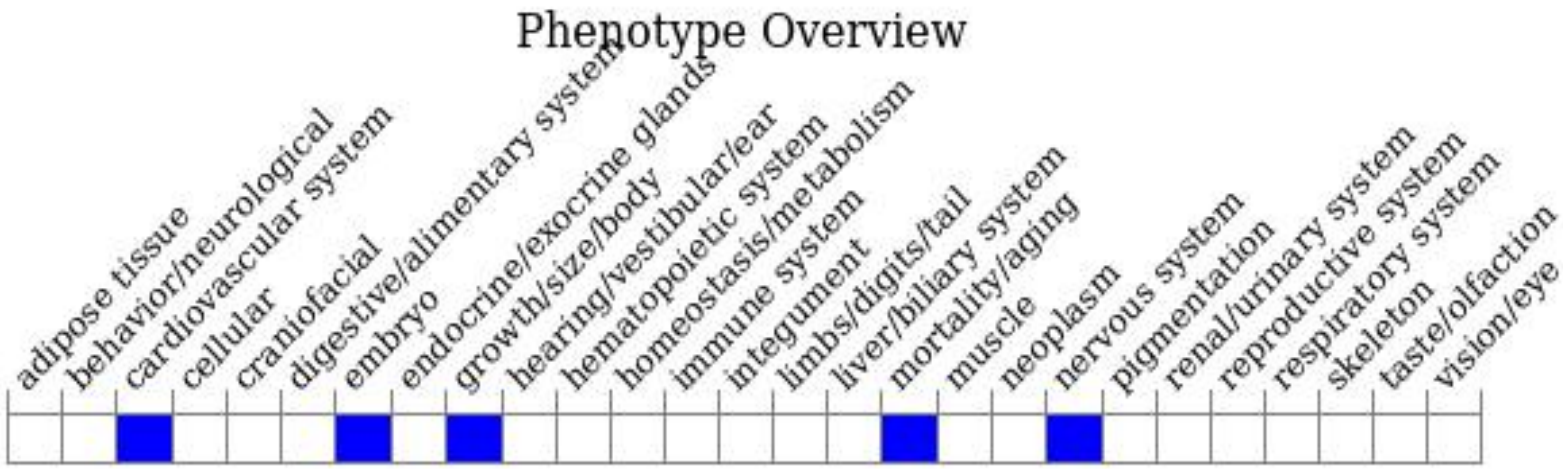
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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