Pcif1 Cas9-CKO Strategy

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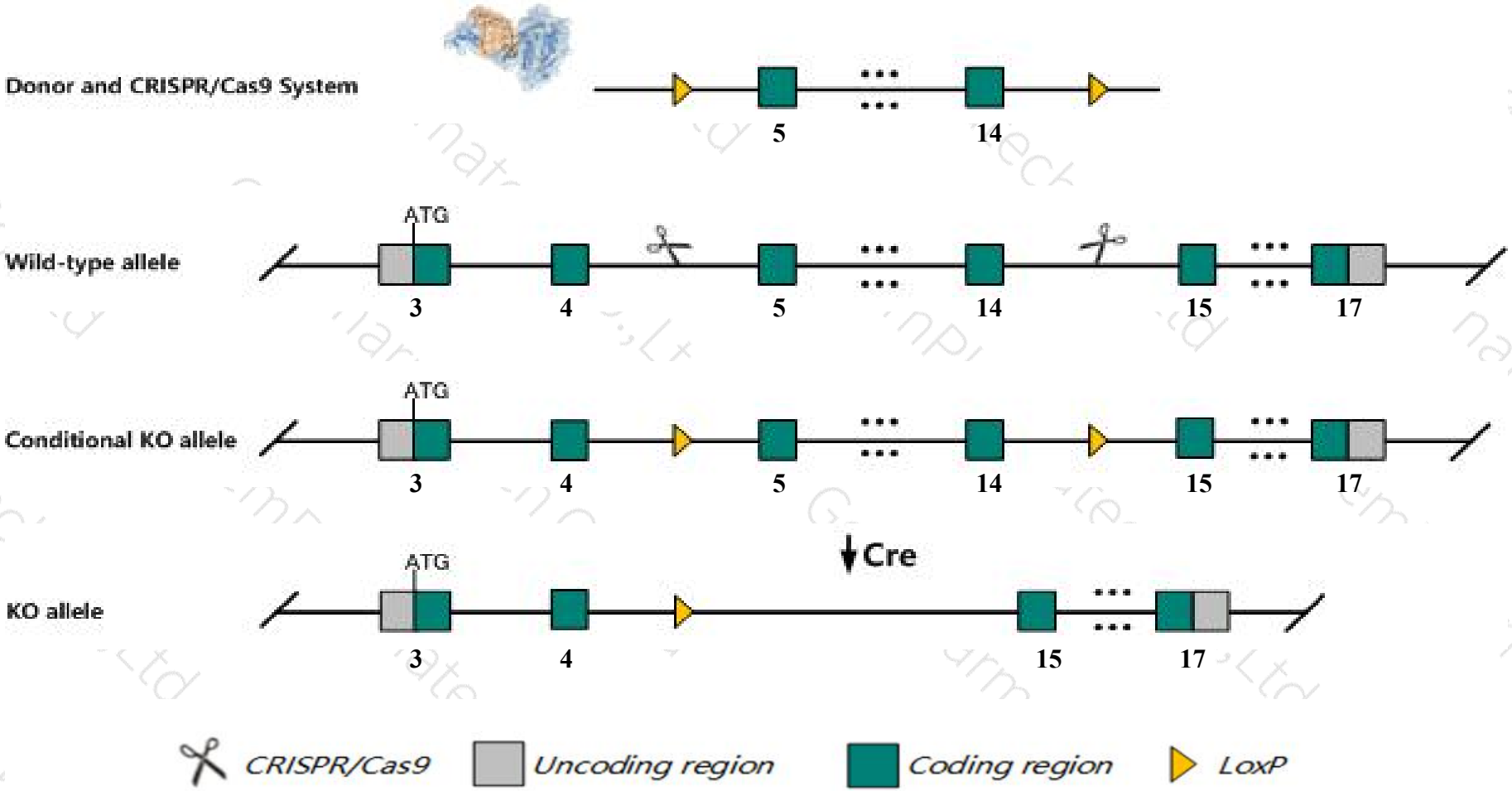
Project Overview

Project Name	***Pcif1***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pcif1* gene. The schematic diagram is as follows:



Technical routes

- The *Pcif1* gene has 4 transcripts. According to the structure of *Pcif1* gene, exon5-exon14 of *Pcif1-201* (ENSMUST00000041643.3) transcript is recommended as the knockout region.The region contains 1361bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Pcif1* 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.

Notice

➢ The *Pcif1* gene is located on the Chr2. 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）

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Pcif1 PDX1 C-terminal inhibiting factor 1 [Mus musculus (house mouse)]

Gene ID: 228866, updated on 19-Mar-2019

Summary

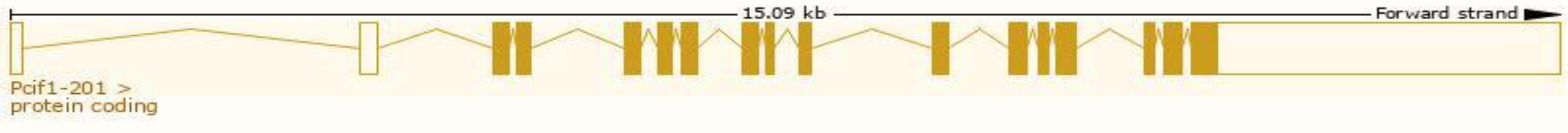
Official Symbol	Pcif1 provided by MGI
Official Full Name	PDX1 C-terminal inhibiting factor 1 provided by MGI
Primary source	MGI:MGI:2443858
See related	Ensembl:ENSMUSG00000039849
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310022K11Rik, C20orf67, CAPAM, F730014I05Rik
Expression	Ubiquitous expression in thymus adult (RPKM 33.7), adrenal adult (RPKM 33.6) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

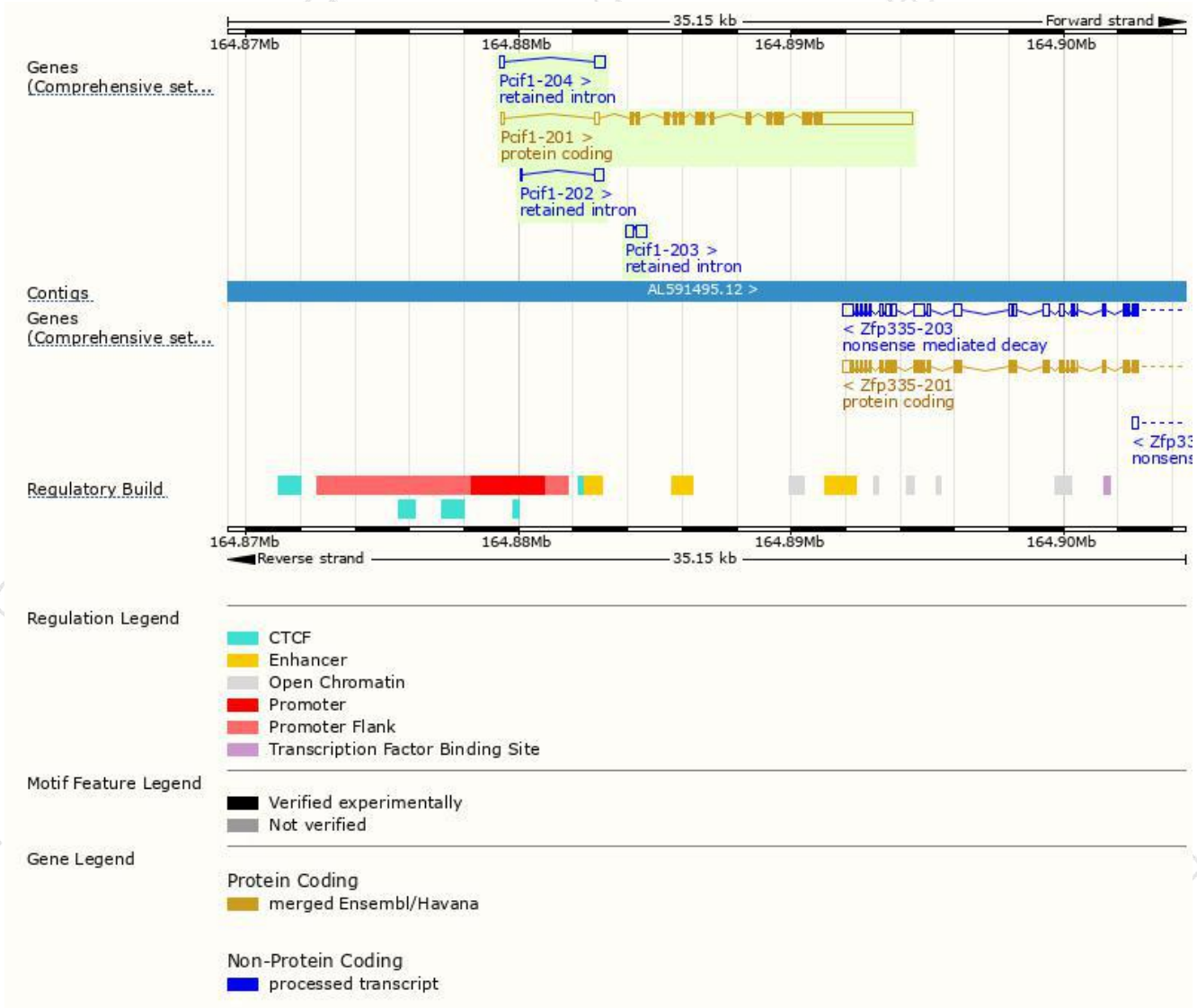
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pcif1-201	ENSMUST00000041643.3	5772	706aa	Protein coding	CCDS17064	P59114 Q542C3	TSL:1 GENCODE basic APPRIS P1
Pcif1-203	ENSMUST00000130213.1	677	No protein	Retained intron	-	-	TSL:3
Pcif1-204	ENSMUST00000145327.1	611	No protein	Retained intron	-	-	TSL:1
Pcif1-202	ENSMUST00000122810.1	383	No protein	Retained intron	-	-	TSL:3

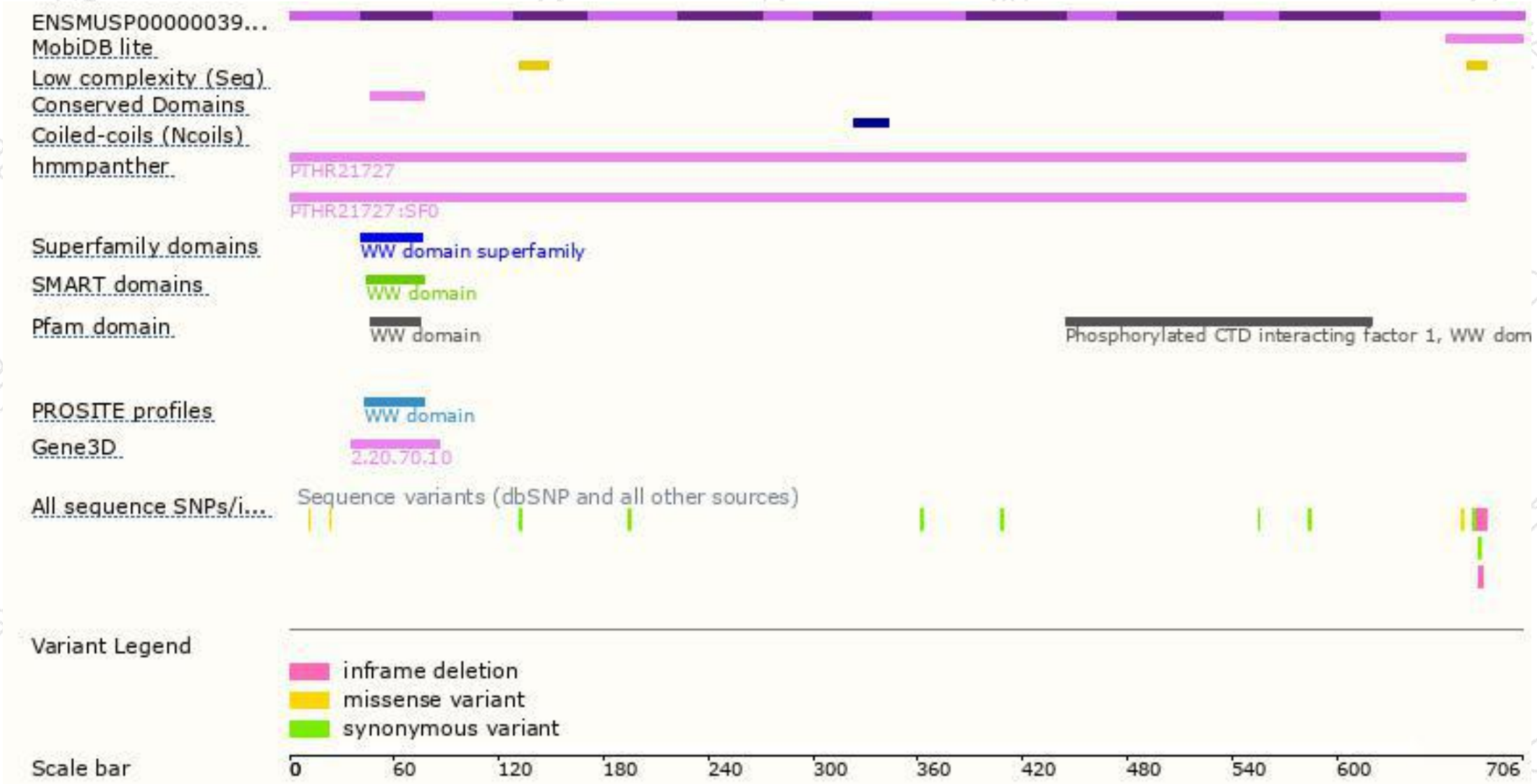
The strategy is based on the design of *Pcif1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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