Ppp1r16b Cas9-CKO Strategy

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Project Overview

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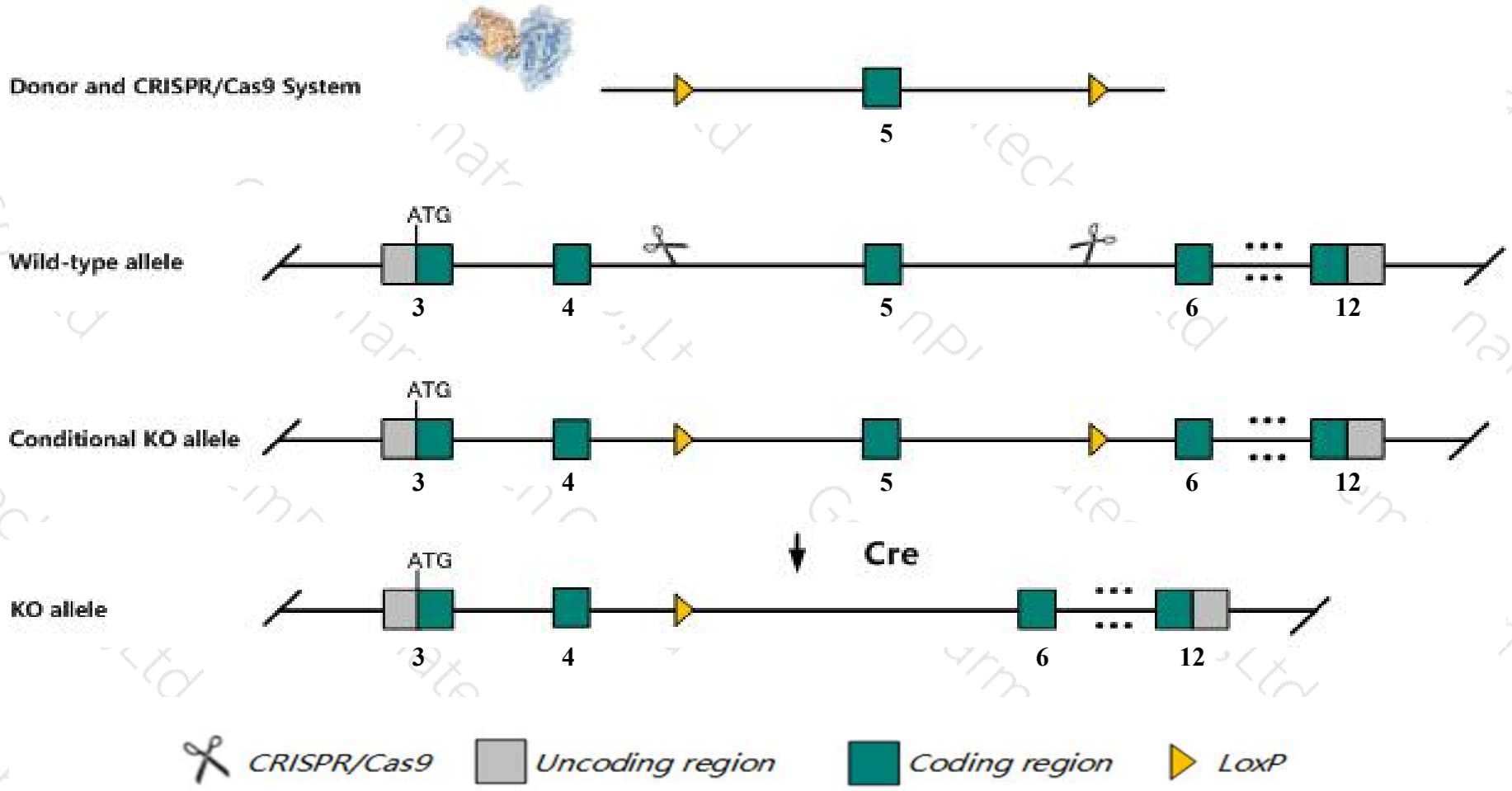
Project Name	***Ppp1r16b***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp1r16b* gene. The schematic diagram is as follows:



Technical routes

- The *Ppp1r16b* gene has 5 transcripts. According to the structure of *Ppp1r16b* gene, exon5 of *Ppp1r16b-202* (ENSMUST00000052927.10) transcript is recommended as the knockout region.The region contains 146bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Ppp1r16b* 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

- According to the existing MGI data,Mice homozygous for a knock-out allele are viable, fertile and grossly normal with no detectable defects in thymopoiesis.

- Some amino acids will remain at the N-terminus and some functions may be retained.

- The *Ppp1r16b* 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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Ppp1r16b protein phosphatase 1, regulatory subunit 16B [Mus musculus (house mouse)]

Gene ID: 228852, updated on 31-Jan-2019

Summary

Official Symbol	Ppp1r16b provided by MGI
Official Full Name	protein phosphatase 1, regulatory subunit 16B provided by MGI
Primary source	MGI:MGI:2151841
See related	Ensembl:ENSMUSG00000037754
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	ANKRD4, C130078N17Rik, TIMAP, Wdt4
Expression	Broad expression in thymus adult (RPKM 16.6), lung adult (RPKM 14.9) and 17 other tissues See more
Orthologs	human all

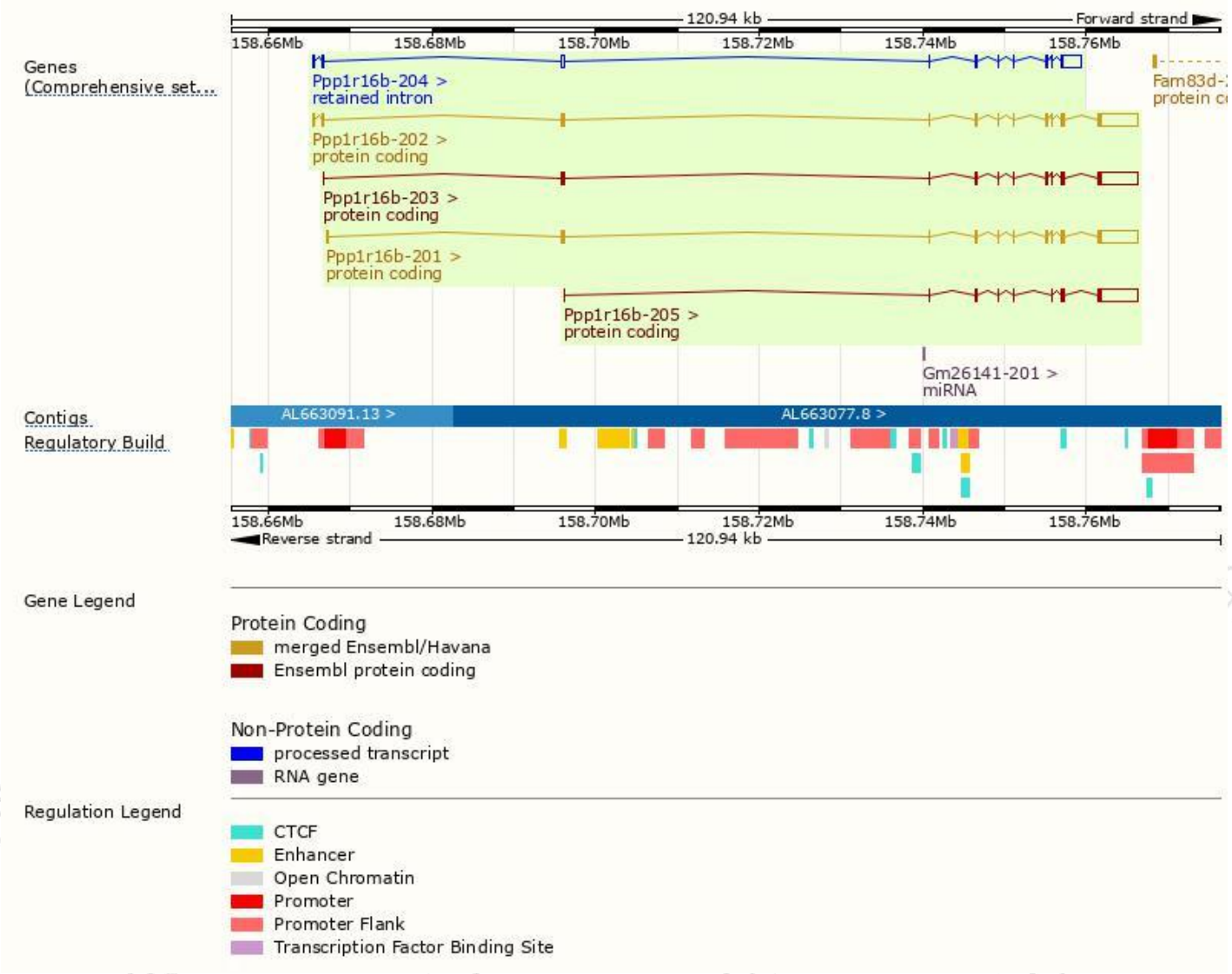
Transcript information（Ensembl）

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

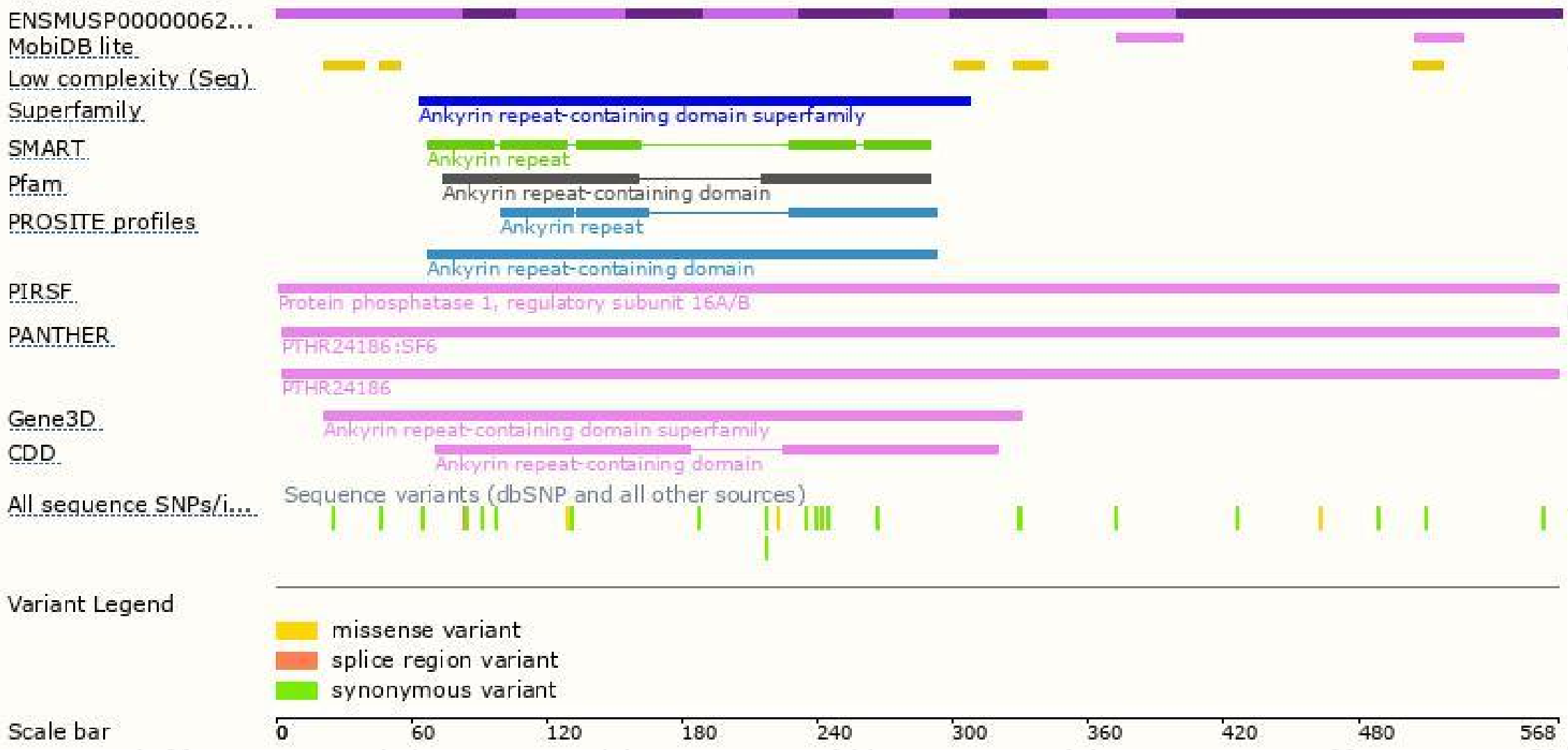
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp1r16b-202	ENSMUST00000052927.10	6685	568aa	Protein coding	CCDS16991	Q544H9 Q8VHQ3	TSL:1 GENCODE basic APPRIS P1
Ppp1r16b-201	ENSMUST00000045503.10	6408	568aa	Protein coding	CCDS16991	Q544H9 Q8VHQ3	TSL:1 GENCODE basic APPRIS P1
Ppp1r16b-203	ENSMUST00000103116.9	6370	568aa	Protein coding	CCDS16991	Q544H9 Q8VHQ3	TSL:5 GENCODE basic APPRIS P1
Ppp1r16b-205	ENSMUST00000145073.1	5878	468aa	Protein coding	-	A2AC90	CDS 5' incomplete TSL:5
Ppp1r16b-204	ENSMUST00000129902.1	3732	No protein	Retained intron	-	-	TSL:5

The strategy is based on the design of *Ppp1r16b-202* 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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