

Plekhhb1 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Plekhb1

Project type

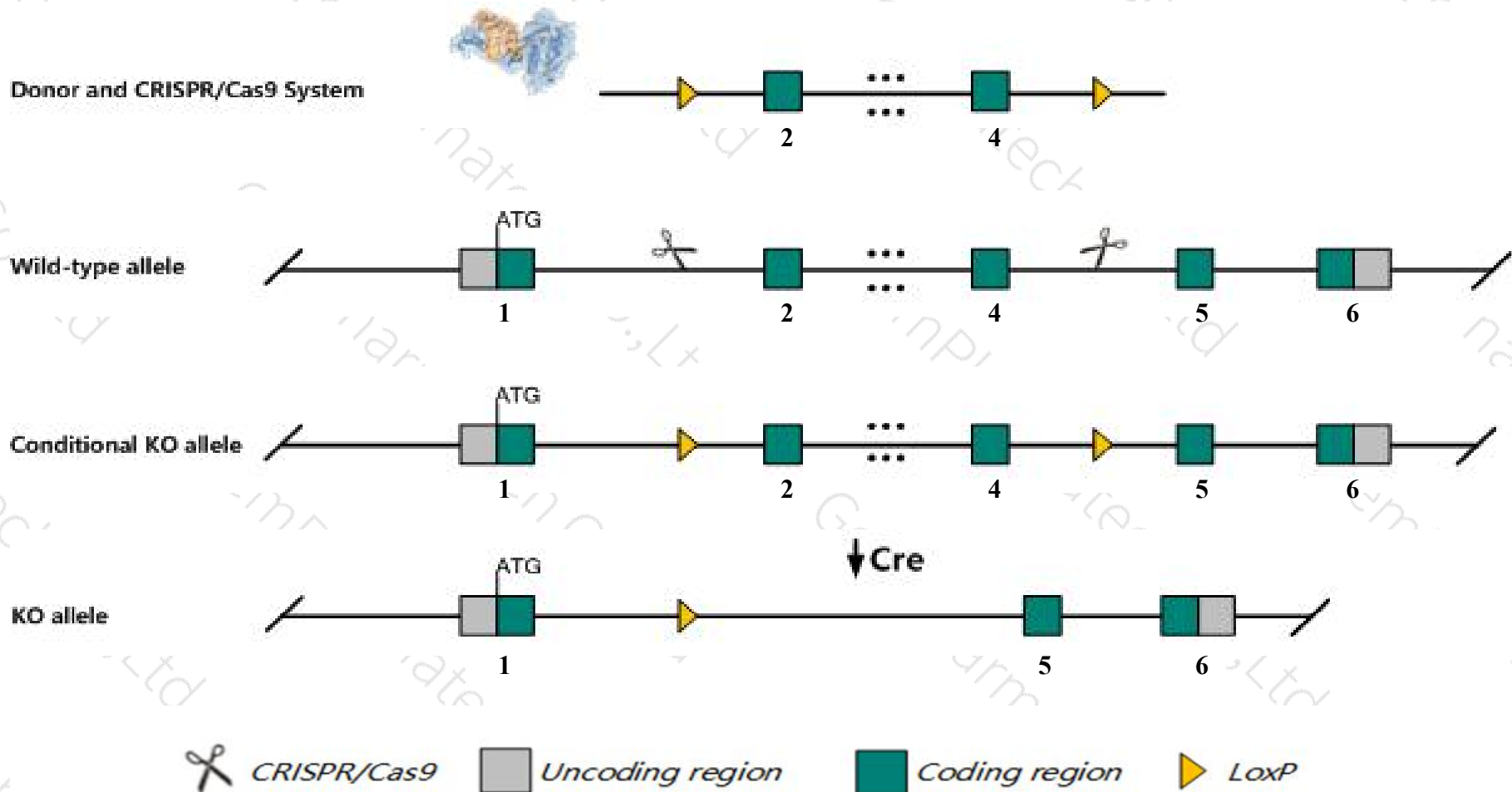
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plekhlb1* gene. The schematic diagram is as follows:



Technical routes

- The *Plekhl1* gene has 12 transcripts. According to the structure of *Plekhl1* gene, exon2-exon4 of *Plekhl1*-205 (ENSMUST00000107046.7) transcript is recommended as the knockout region. The region contains 296bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plekhl1* 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.

- According to the existing MGI data, Homozygous null mice are viable with no abnormalities detected in growth, behavior including balance, inner ear histology, or serum and urine electrolyte concentrations.
- The *Plekhl1* gene is located on the Chr7. 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)

Plekhab1 pleckstrin homology domain containing, family B (evectins) member 1 [Mus musculus (house mouse)]

Gene ID: 27276, updated on 31-Jan-2019

Summary



Official Symbol Plekhab1 provided by [MGI](#)

Official Full Name pleckstrin homology domain containing, family B (evectins) member 1 provided by [MGI](#)

Primary source [MGI:MGI:1351469](#)

See related [Ensembl:ENSMUSG00000030701](#)

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 AI315628, PHR1, Phret1, evt-1

Expression Biased expression in cerebellum adult (RPKM 133.7), cortex adult (RPKM 82.4) and 6 other tissues [See more](#)

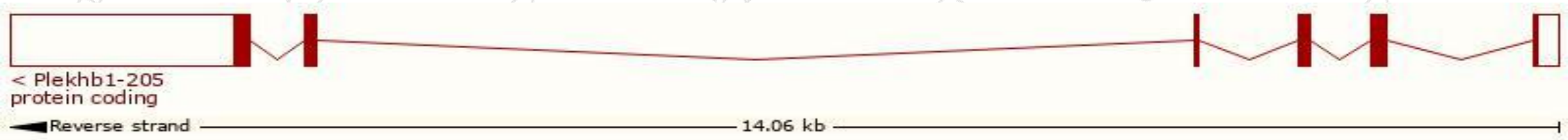
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

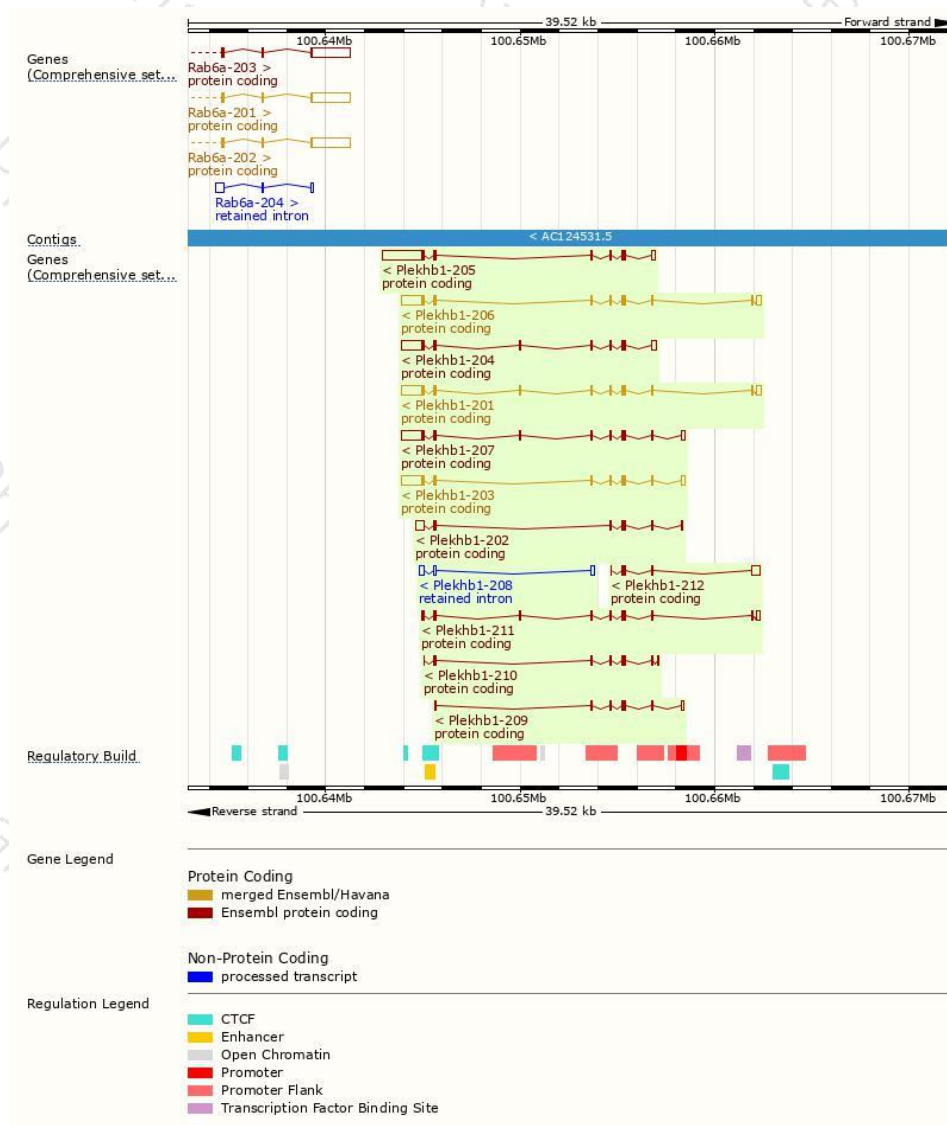
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plekhb1-205	ENSMUST00000107046.7	2793	189aa	Protein coding	CCDS52324	Q3TP62 Q9QYE9	TSL:1 GENCODE basic APPRIS ALT 1
Plekhb1-201	ENSMUST00000079176.13	2079	243aa	Protein coding	CCDS21504	Q9QYE9	TSL:1 GENCODE basic APPRIS P3
Plekhb1-206	ENSMUST00000107047.9	1926	208aa	Protein coding	CCDS52326	Q9QYE9	TSL:1 GENCODE basic APPRIS ALT 1
Plekhb1-204	ENSMUST00000107045.8	1919	224aa	Protein coding	CCDS52325	Q9QYE9	TSL:1 GENCODE basic APPRIS ALT 1
Plekhb1-207	ENSMUST00000116287.8	1911	224aa	Protein coding	CCDS52325	Q9QYE9	TSL:3 GENCODE basic APPRIS ALT 1
Plekhb1-203	ENSMUST00000107044.9	1806	189aa	Protein coding	CCDS52324	Q3TP62 Q9QYE9	TSL:1 GENCODE basic APPRIS ALT 1
Plekhb1-202	ENSMUST00000107043.7	931	134aa	Protein coding	CCDS80756	D3YV71	TSL:2 GENCODE basic
Plekhb1-211	ENSMUST00000151123.7	937	239aa	Protein coding	-	D3YZT7	CDS 3' incomplete TSL:5
Plekhb1-212	ENSMUST00000208812.1	691	90aa	Protein coding	-	A0A140LHQ7	CDS 3' incomplete TSL:5
Plekhb1-209	ENSMUST00000138830.1	526	122aa	Protein coding	-	D3Z1E2	CDS 3' incomplete TSL:2
Plekhb1-210	ENSMUST00000139708.8	516	149aa	Protein coding	-	D3Z6S5	CDS 3' incomplete TSL:5
Plekhb1-208	ENSMUST00000135255.1	504	No protein	Retained intron	-	-	TSL:2

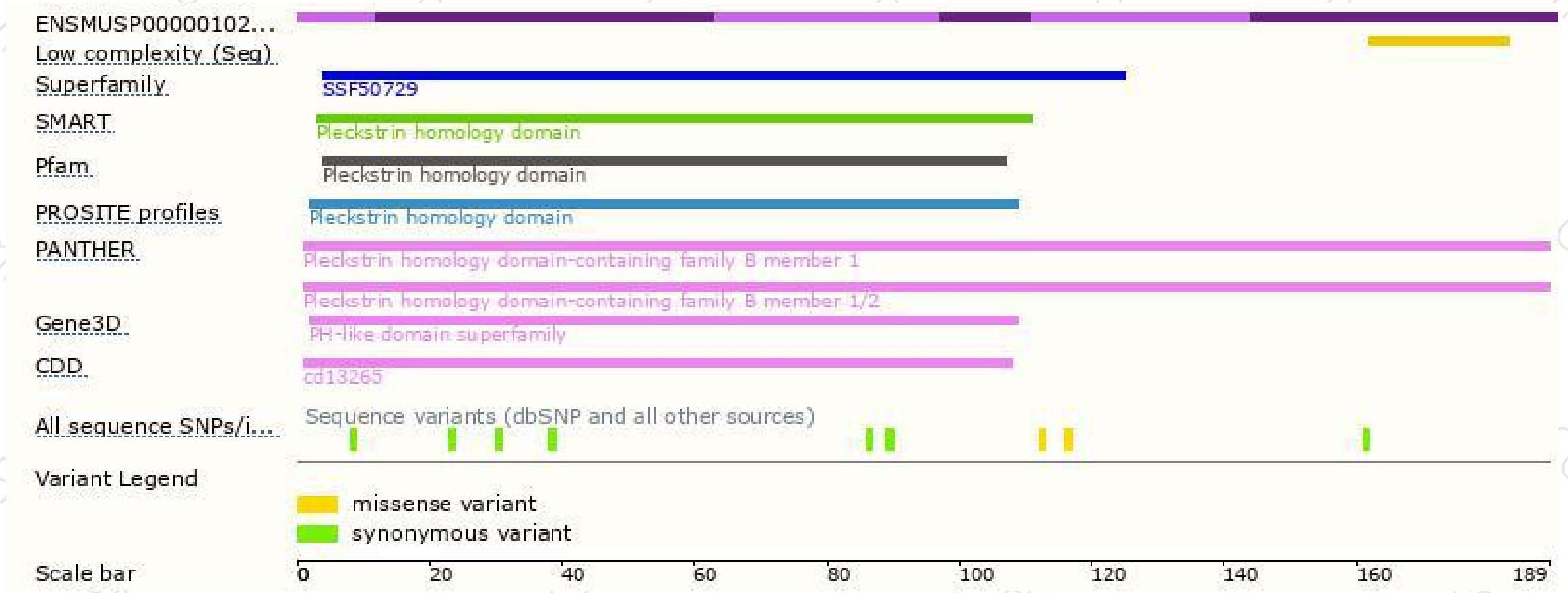
The strategy is based on the design of *Plekhb1-205* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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