

Plekhs1 Cas9-CKO Strategy

Designer:

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Project Overview



Project Name

Plekhs1

Project type

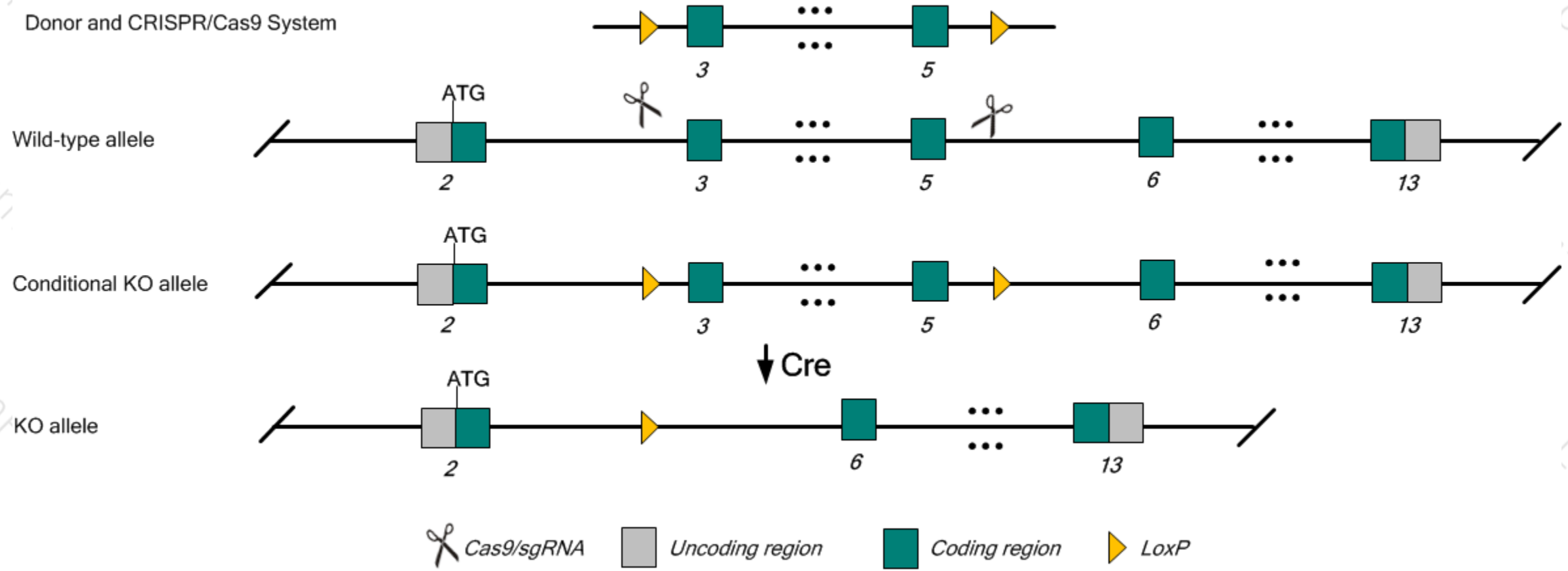
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plekhs1* gene. The schematic diagram is as follows:



- The *Plekhs1* gene has 6 transcripts, According to the structure of *Plekhs1* gene, exon3-5 of *Plekhs1-201* transcript is recommended as the knockout region. The region contains the 331bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plekhs1* 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 or cell types.

- The *Plekhs1* gene is located in the Chr19. 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Plekhs1 pleckstrin homology domain containing, family S member 1 [*Mus musculus* (house mouse)]

Gene ID: 226245, updated on 27-Jan-2018

Summary

Official Symbol	Plekhs1 provided by MGI
Official Full Name	pleckstrin homology domain containing, family S member 1 provided by MGI
Primary source	MGI:MGI:2443041
See related	Ensembl:ENSMUSG000000035818
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	9930023K05Rik
Expression	Biased expression in subcutaneous fat pad adult (RPKM 8.4), ovary adult (RPKM 3.3) and 1 other tissue See more
Orthologs	human all

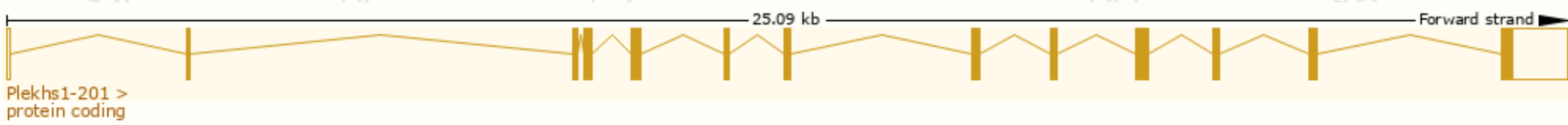
Transcript information (Ensembl)



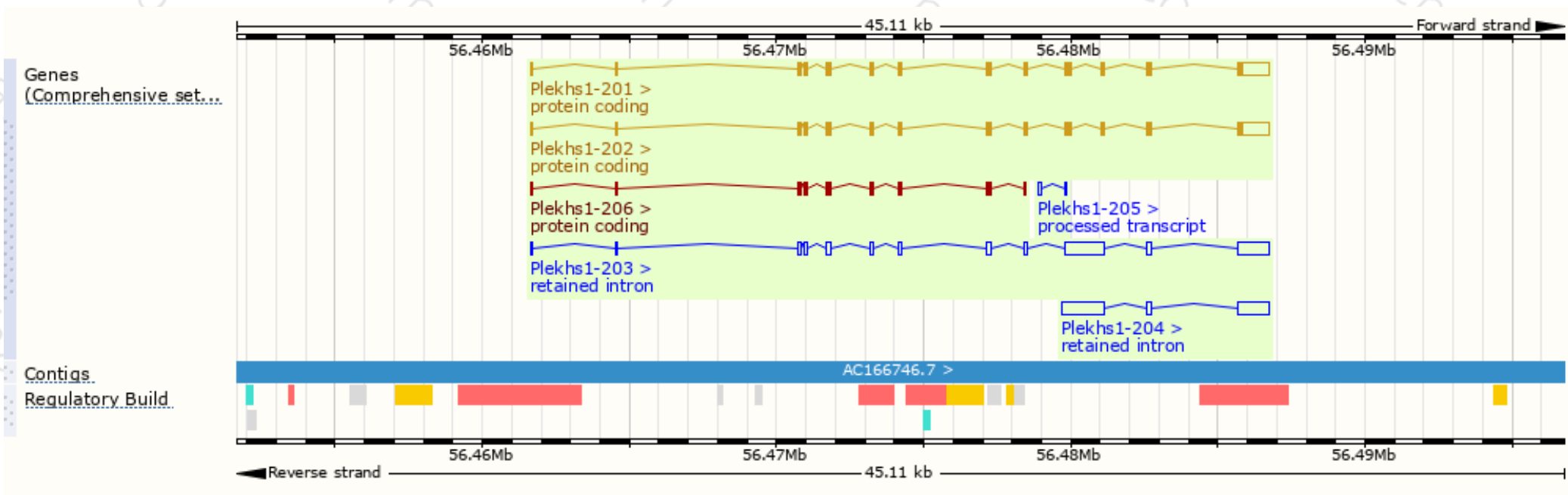
The gene has 6 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Plekhs1-201	ENSMUST00000039666.7	2378	474aa	Protein coding	CCDS29916	Q8BW88	NM_172641 NP_766229	TSL:1 GENCODE basic APPRIS P3
Plekhs1-202	ENSMUST00000178590.8	2378	474aa	Protein coding	CCDS57148	Q8BW88	NM_001164263 NP_001157735	TSL:1 GENCODE basic APPRIS ALT2
Plekhs1-206	ENSMUST00000225909.1	808	249aa	Protein coding	-	A0A286YDR4	-	CDS 3' incomplete
Plekhs1-205	ENSMUST00000225391.1	150	No protein	Processed transcript	-	-	-	
Plekhs1-203	ENSMUST00000224840.1	3401	No protein	Retained intron	-	-	-	
Plekhs1-204	ENSMUST00000225008.1	2662	No protein	Retained intron	-	-	-	

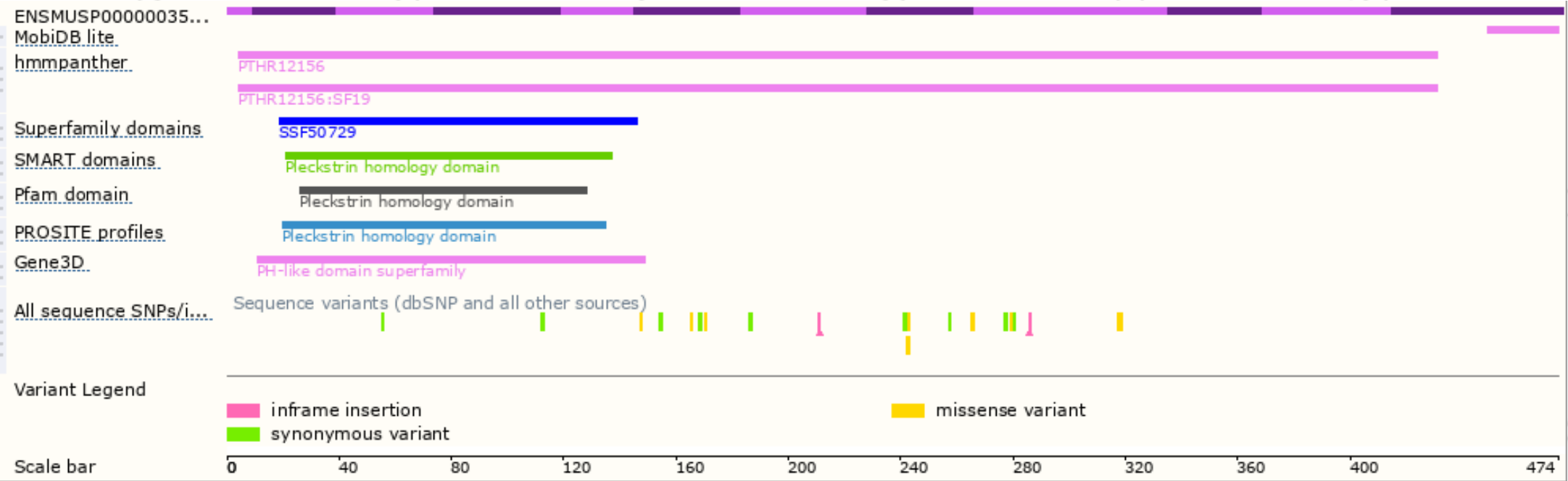
The strategy is based on the design of *Plekhs1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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