

Plekhh3 Cas9-KO Strategy

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Project Overview

Project Name

Plekhh3

Project type

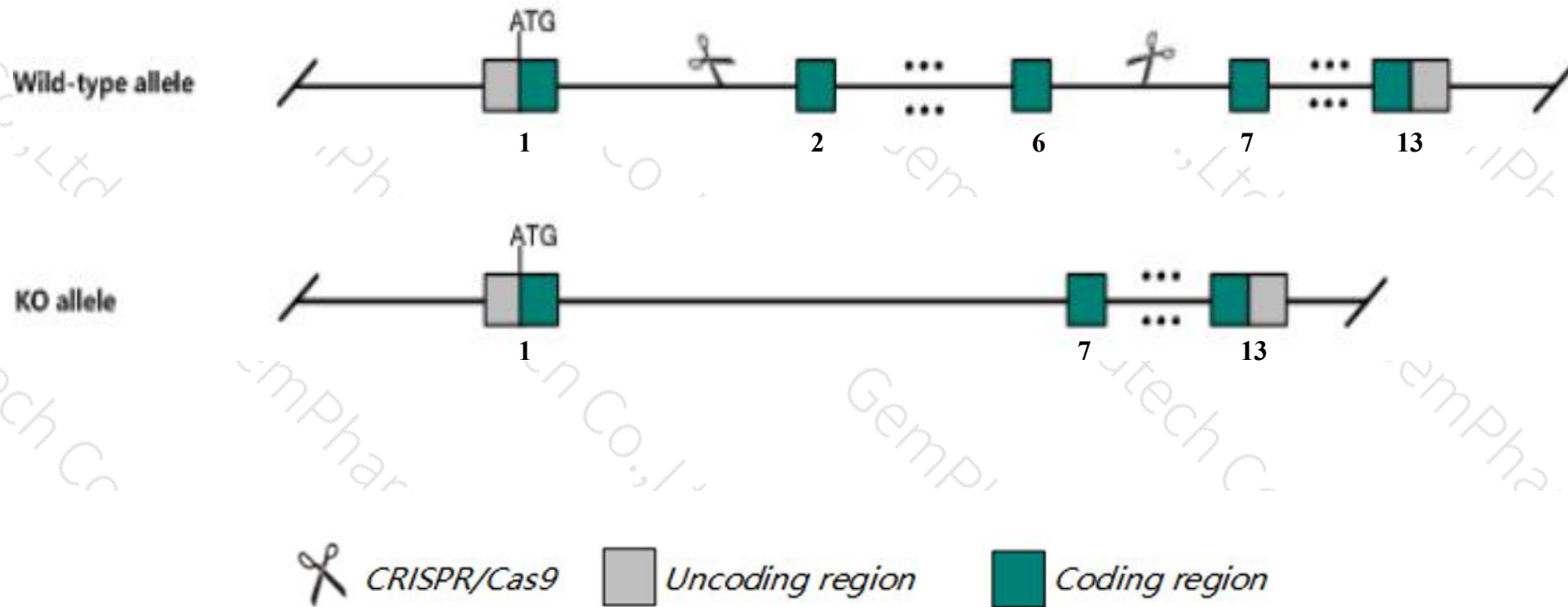
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Plekhh3* gene. The schematic diagram is as follows:



Technical routes

- The *Plekhh3* gene has 6 transcripts. According to the structure of *Plekhh3* gene, exon2-exon6 of *Plekhh3*-201(ENSMUST00000043397.13) transcript is recommended as the knockout region. The region contains 607bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Plekhh3* gene. The brief process is as follows: CRISPR/Cas9 system 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 KO region is close to *Cntnap1* gene. Knockout the region may affect the function of *Cntnap1* gene.
- The *Plekhh3* gene is located on the Chr11. 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Plekhh3 pleckstrin homology domain containing, family H (with MyTH4 domain) member 3 [*Mus musculus* (house mouse)]

Gene ID: 217198, updated on 25-Sep-2020

Summary



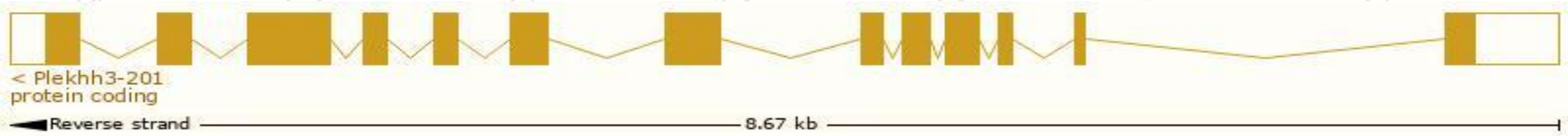
Official Symbol	Plekhh3 provided by MGI
Official Full Name	pleckstrin homology domain containing, family H (with MyTH4 domain) member 3 provided by MGI
Primary source	MGI:MGI:2384950
See related	Ensembl:ENSMUSG00000035172
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC020025
Expression	Broad expression in adrenal adult (RPKM 28.6), ovary adult (RPKM 23.4) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

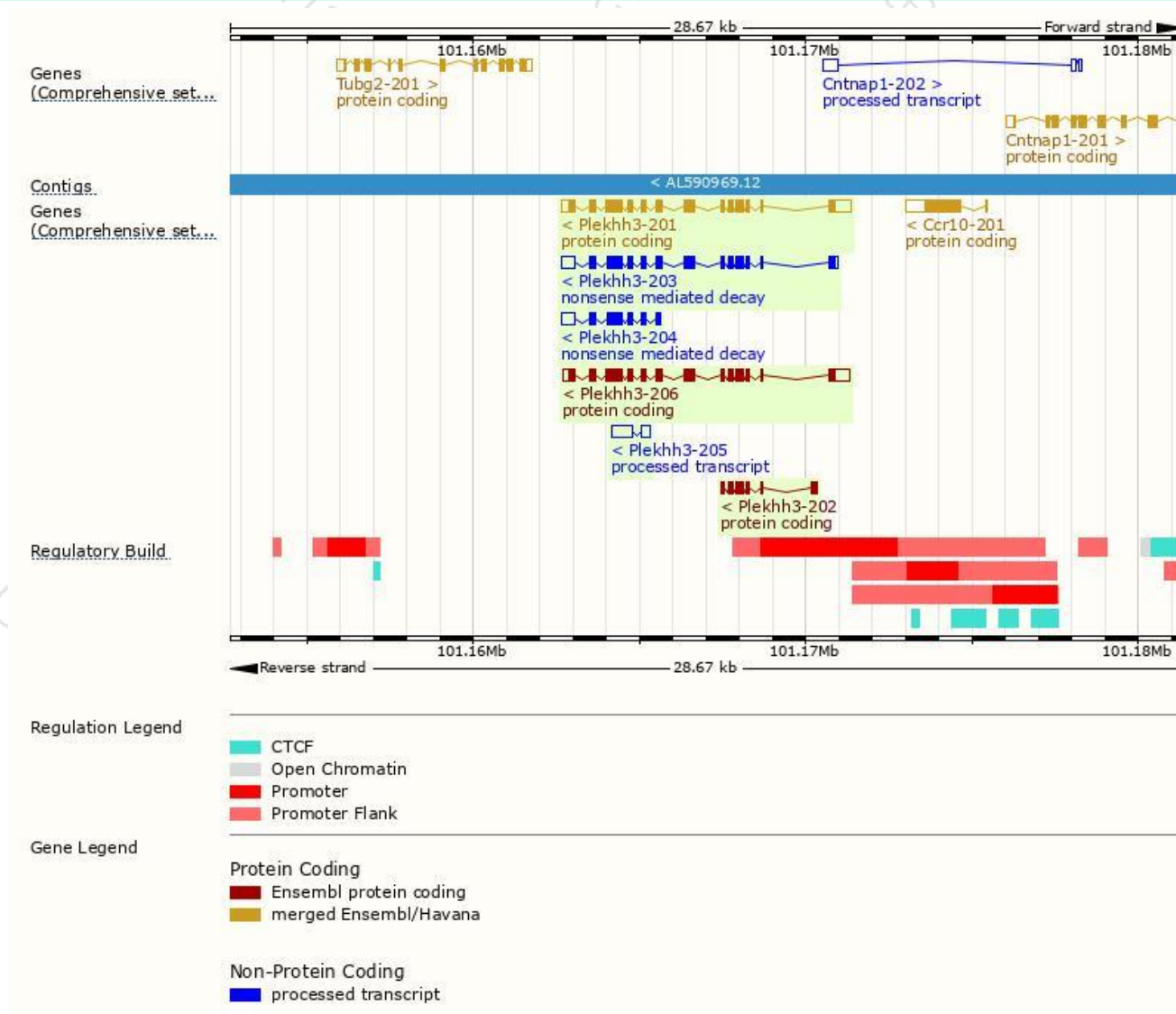
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Plekhh3-201	ENSMUST00000043397.13	3056	796aa	Protein coding	CCDS25453	Q8VCE9	TSL:1 GENCODE basic APPRIS P3
Plekhh3-206	ENSMUST00000164474.7	3010	793aa	Protein coding	CCDS83899	Q8VCE9	TSL:1 GENCODE basic APPRIS ALT2
Plekhh3-202	ENSMUST00000123864.1	785	247aa	Protein coding	-	A2A4L0	CDS 3' incomplete TSL:3
Plekhh3-203	ENSMUST00000129895.7	2635	705aa	Nonsense mediated decay	-	Q8VCE9	TSL:5
Plekhh3-204	ENSMUST00000139200.7	1410	320aa	Nonsense mediated decay	-	M0QWE8	CDS 5' incomplete TSL:1
Plekhh3-205	ENSMUST00000156320.1	890	No protein	Processed transcript	-	-	TSL:3

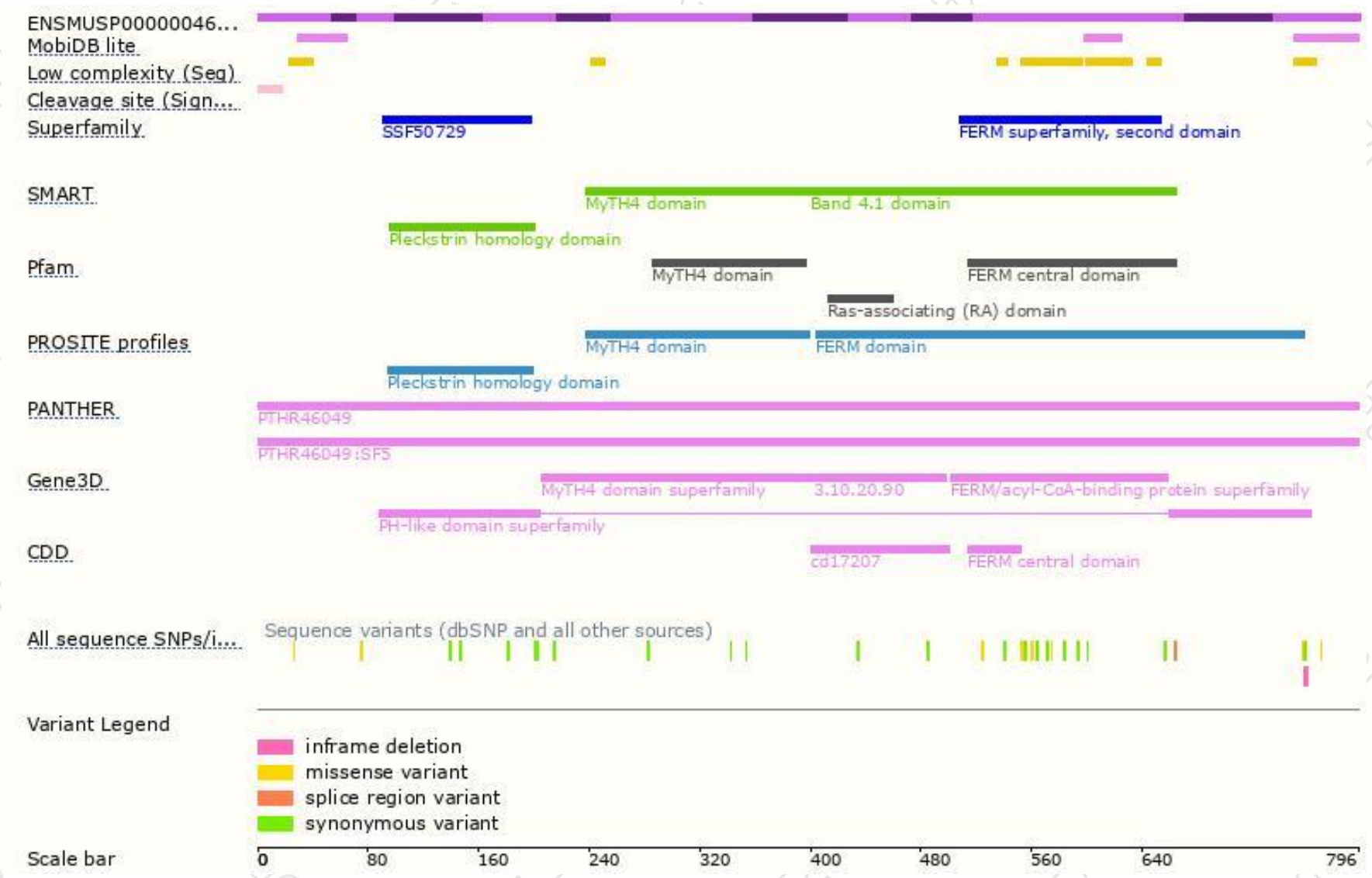
The strategy is based on the design of *Plekhh3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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