

Ppfla2 Cas9-KO Strategy

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Design Date: 2020-4-15

Project Overview

Project Name

Ppfia2

Project type

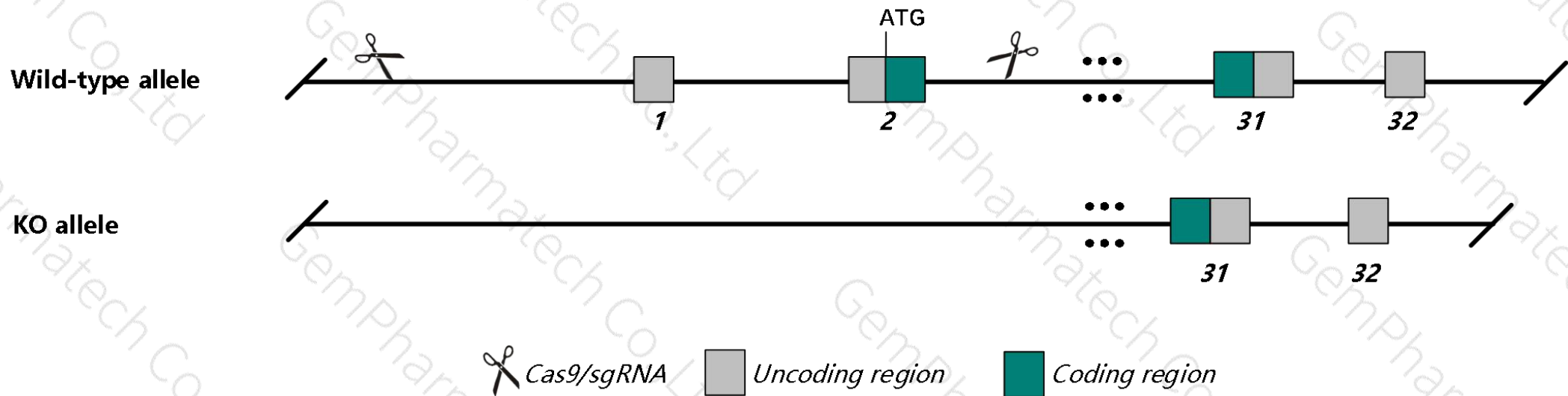
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppfia2* gene. The schematic diagram is as follows:



- The *Ppfia2* gene has 4 transcripts. According to the structure of *Ppfia2* gene, exon1-exon2 of *Ppfia2*-203 (ENSMUST00000217854.1) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppfia2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Ppfa2* gene is located on the Chr10. 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)

Ppfia2 protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 2 [Mus musculus (house mouse)]

Gene ID: 327814, updated on 13-Mar-2020

Summary



Official Symbol	Ppfia2 provided by MGI
Official Full Name	protein tyrosine phosphatase, receptor type, f polypeptide (PTPRF), interacting protein (liprin), alpha 2 provided by MGI
Primary source	MGI:MGI:2443834
See related	Ensembl:ENSMUSG00000053825
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	5330438O12, B230207K17Rik, E130120L08Rik, mKIAA4112
Expression	Biased expression in frontal lobe adult (RPKM 9.9), CNS E18 (RPKM 9.1) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

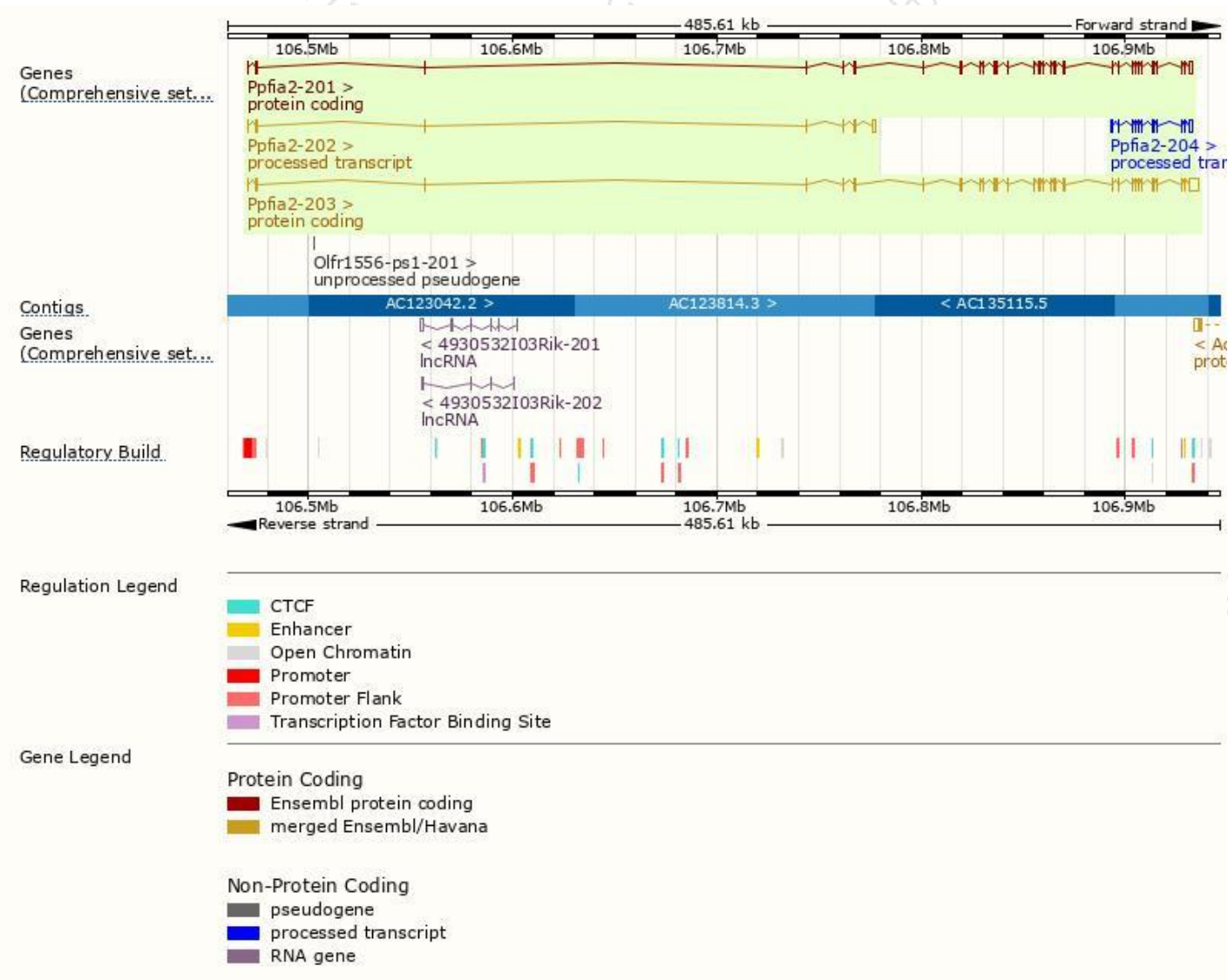
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppfia2-203	ENSMUST00000217854.1	8885	1257aa	Protein coding	CCDS56746	B8QI34	TSL:1 GENCODE basic APPRIS P2
Ppfia2-201	ENSMUST00000029404.16	5429	1256aa	Protein coding	-	F7CYX4	TSL:1 GENCODE basic APPRIS ALT 1
Ppfia2-204	ENSMUST00000219024.1	2977	No protein	Processed transcript	-	-	TSL:1
Ppfia2-202	ENSMUST00000169303.2	2484	No protein	Processed transcript	-	-	TSL:1

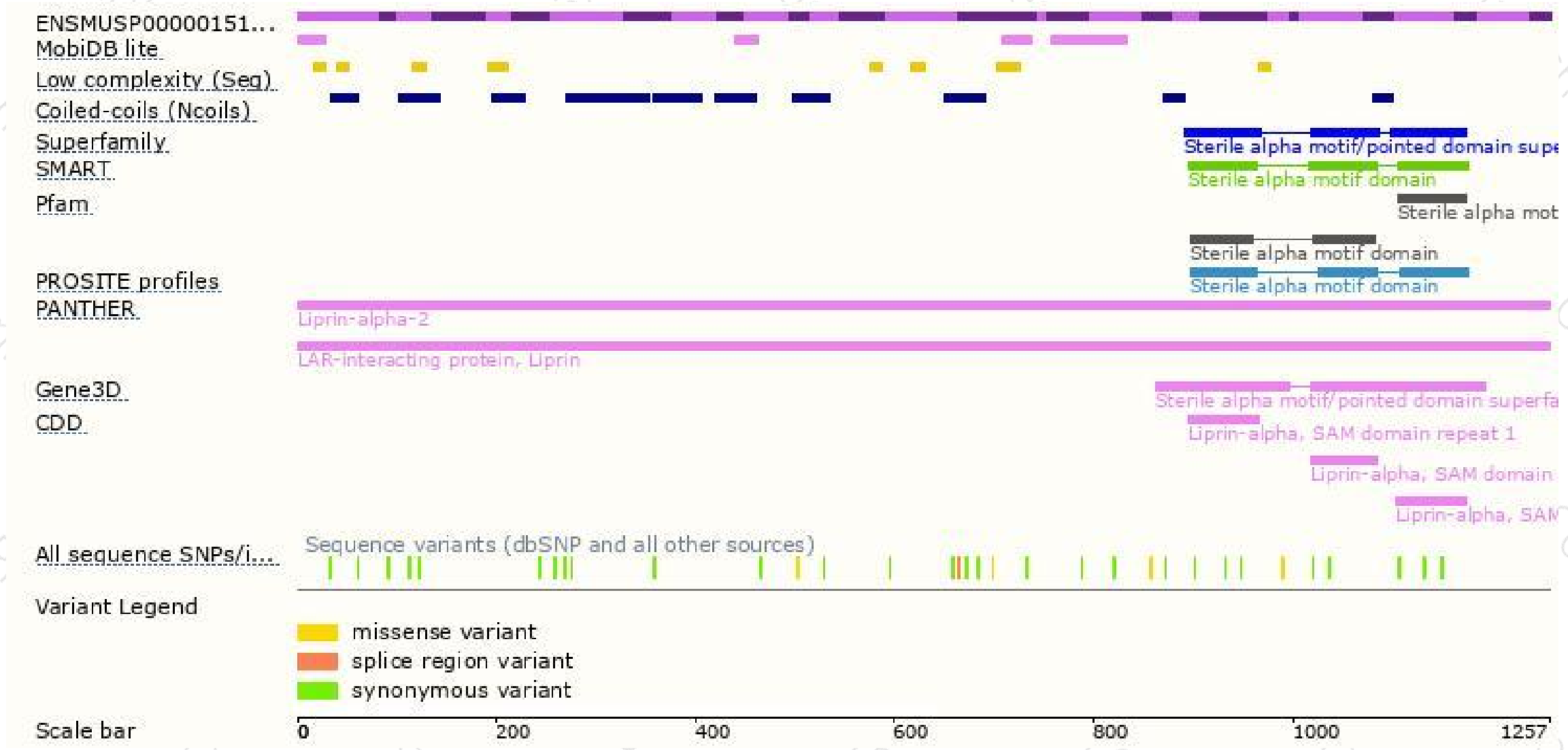
The strategy is based on the design of *Ppfia2-203* transcript,the transcription is shown below:



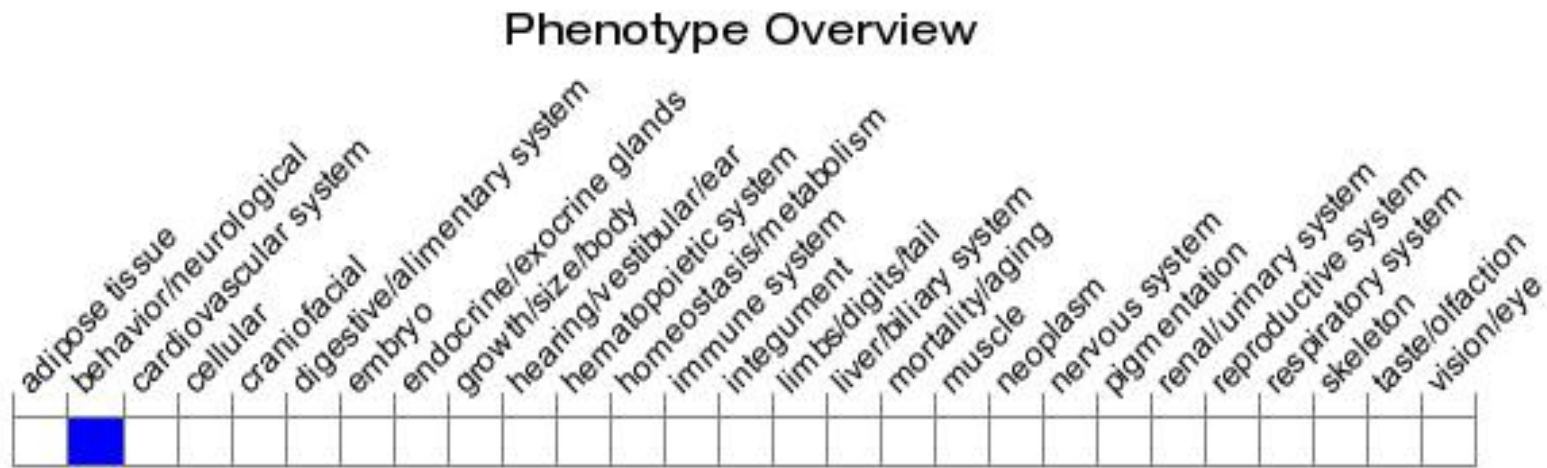
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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