

Pwwp3a Cas9-KO Strategy

Designer:	Huan Fan
Reviewer	Huan Wang
Design Date:	2020-3-2

Project Overview

Project Name

Pwwp3a

Project type

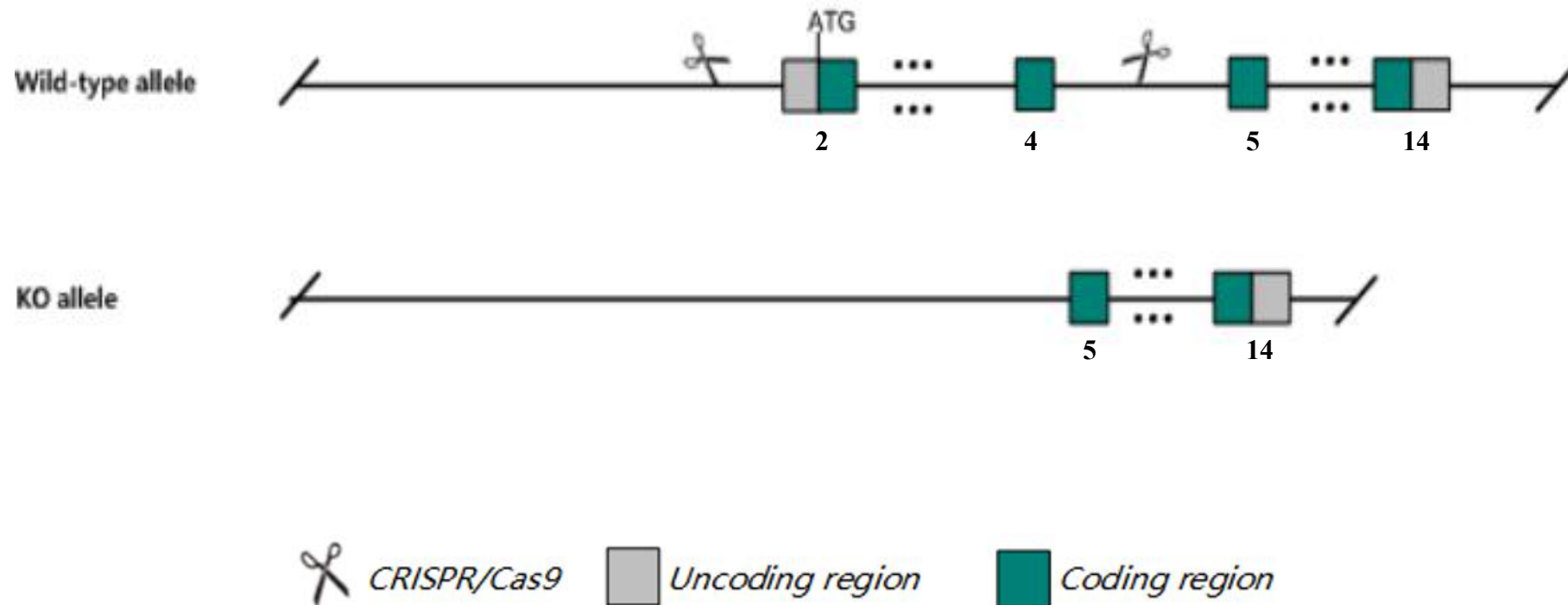
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pwpp3a* gene. The schematic diagram is as follows:



The *Pwwp3a* gene has 11 transcripts. According to the structure of *Pwwp3a* gene, exon2-exon4 of *Pwwp3a-201* (ENSMUST00000020365.14) 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 *Pwwp3a* gene. The brief process is as follows: CRISPR/Cas9 system

The *Pwwp3a* 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.

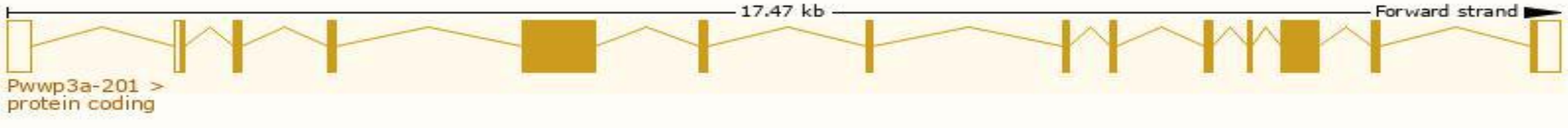
This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Transcript information (Ensembl)

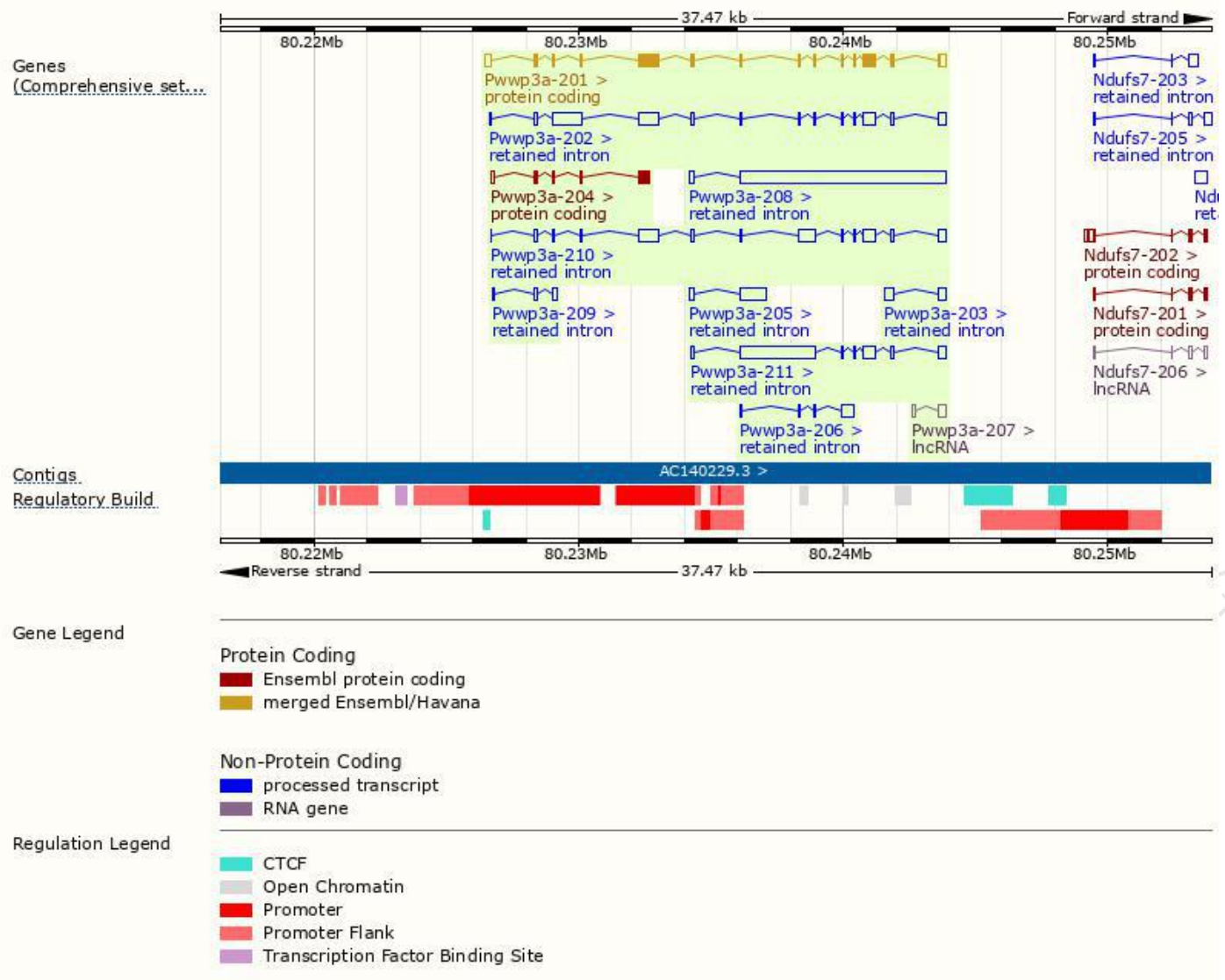
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pwwp3a-201	ENSMUST00000020365.14	2640	682aa	Protein coding	CCDS24014	Q6DID5	TSL:1 GENCODE basic APPRIS P1
Pwwp3a-204	ENSMUST00000130260.1	852	219aa	Protein coding	-	D3Z468	CDS 3' incomplete TSL:2
Pwwp3a-208	ENSMUST00000138801.1	7927	No protein	Retained intron	-	-	TSL:1
Pwwp3a-211	ENSMUST00000146538.1	3847	No protein	Retained intron	-	-	TSL:1
Pwwp3a-202	ENSMUST00000125784.7	3392	No protein	Retained intron	-	-	TSL:1
Pwwp3a-210	ENSMUST00000141962.7	2858	No protein	Retained intron	-	-	TSL:5
Pwwp3a-205	ENSMUST00000135598.1	1137	No protein	Retained intron	-	-	TSL:1
Pwwp3a-206	ENSMUST00000136208.1	682	No protein	Retained intron	-	-	TSL:3
Pwwp3a-203	ENSMUST00000126917.7	663	No protein	Retained intron	-	-	TSL:1
Pwwp3a-209	ENSMUST00000139431.1	350	No protein	Retained intron	-	-	TSL:2
Pwwp3a-207	ENSMUST00000136791.1	424	No protein	lncRNA	-	-	TSL:3

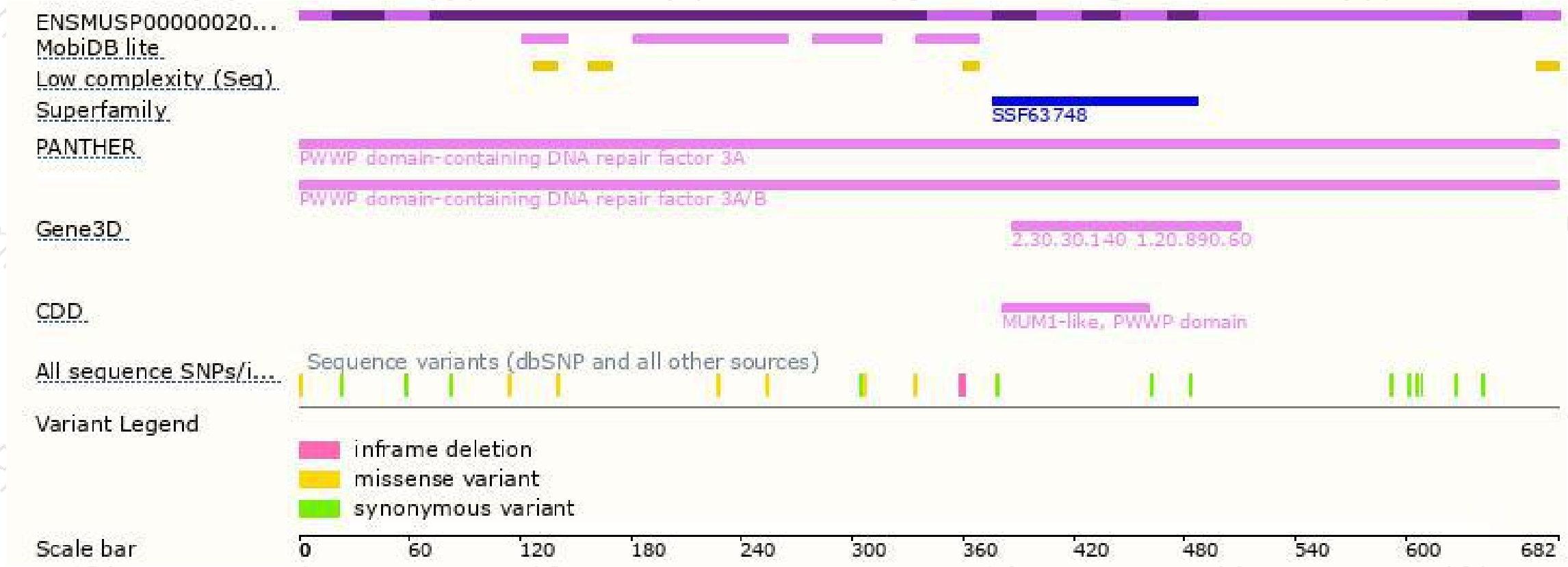
The strategy is based on the design of *Pwwp3a-201* transcript,The transcription is shown below



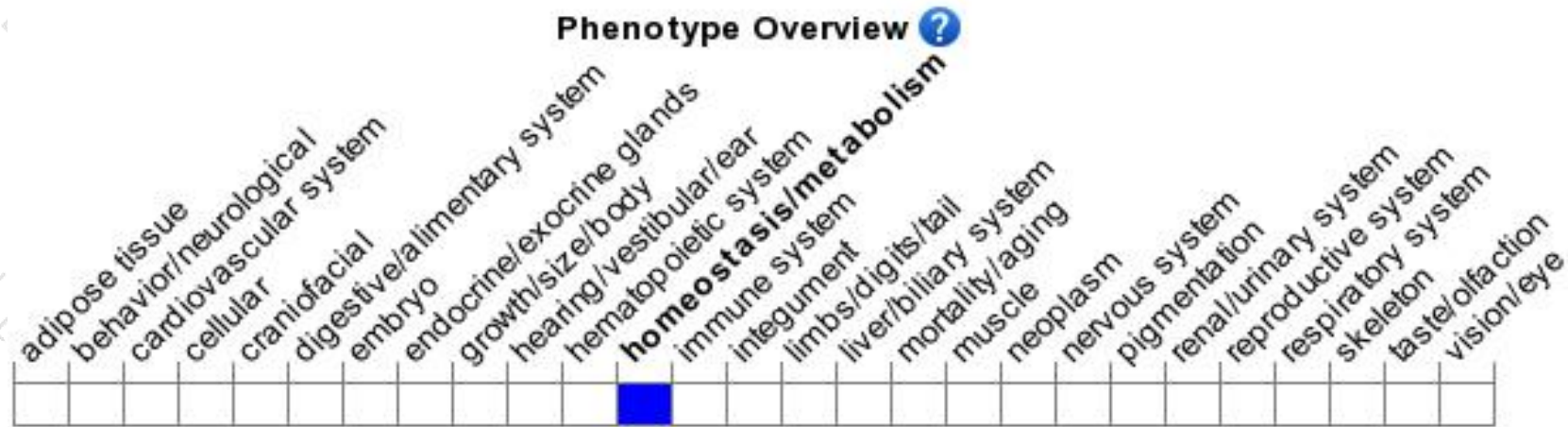
Genomic location distribution



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.

Tel: 400-9660890

