

Dpp8 Cas9-CKO Strategy

Designer: Jinling Wang

Reviewer: Miaomiao Cui

Design Date: 2018-12-25

Project Overview

Project Name

Dpp8

Project type

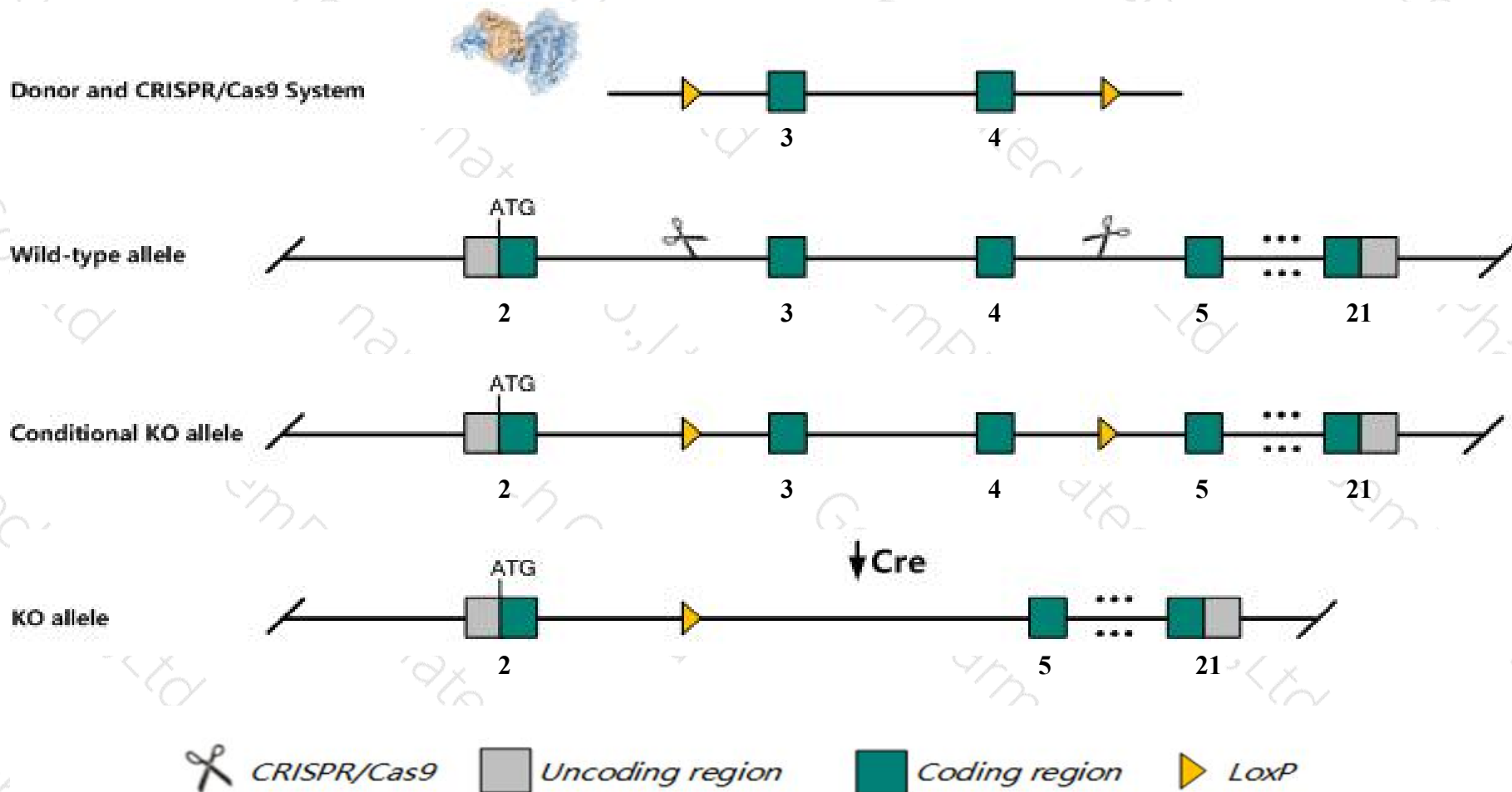
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dpp8* gene. The schematic diagram is as follows:



Technical routes

- The *Dpp8* gene has 8 transcripts. According to the structure of *Dpp8* gene, exon3-exon4 of *Dpp8*-201(ENSMUST00000034960.13) transcript is recommended as the knockout region. The region contains 386bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dpp8* 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.

Notice

- The *Dpp8* gene is located on the Chr9. 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)

Dpp8 dipeptidylpeptidase 8 [Mus musculus (house mouse)]

Gene ID: 74388, updated on 13-Mar-2020

Summary



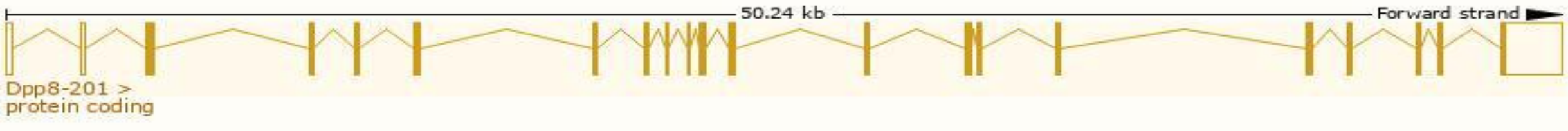
Official Symbol	Dpp8 provided by MGI
Official Full Name	dipeptidylpeptidase 8 provided by MGI
Primary source	MGI:MGI:1921638
See related	Ensembl:ENSMUSG00000032393
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310004I03Rik, 4932434F09Rik, AI666706, DPP VIII
Expression	Ubiquitous expression in bladder adult (RPKM 15.6), cerebellum adult (RPKM 15.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

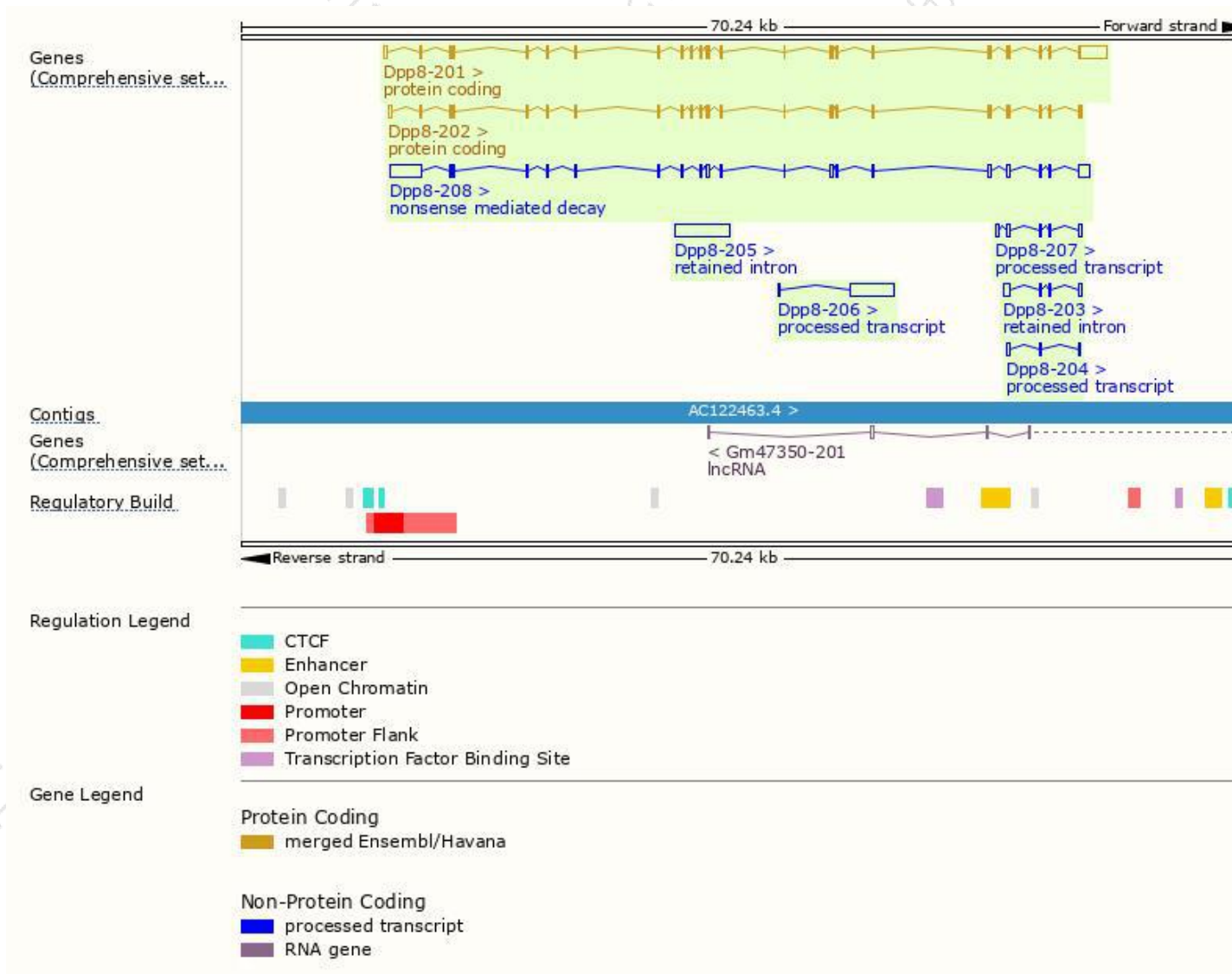
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dpp8-201	ENSMUST00000034960.13	4808	892aa	Protein coding	CCDS23285	Q80YA7	TSL:1 GENCODE basic APPRIS P1
Dpp8-202	ENSMUST00000167773.1	3142	892aa	Protein coding	CCDS23285	Q80YA7	TSL:1 GENCODE basic APPRIS P1
Dpp8-208	ENSMUST00000217434.1	5515	334aa	Nonsense mediated decay	-	A0A1L1STG9	TSL:1
Dpp8-206	ENSMUST00000216309.1	3265	No protein	Processed transcript	-	-	TSL:1
Dpp8-207	ENSMUST00000217328.1	699	No protein	Processed transcript	-	-	TSL:3
Dpp8-204	ENSMUST00000214678.1	416	No protein	Processed transcript	-	-	TSL:3
Dpp8-205	ENSMUST00000216010.1	3864	No protein	Retained intron	-	-	TSL:NA
Dpp8-203	ENSMUST00000214247.1	836	No protein	Retained intron	-	-	TSL:2

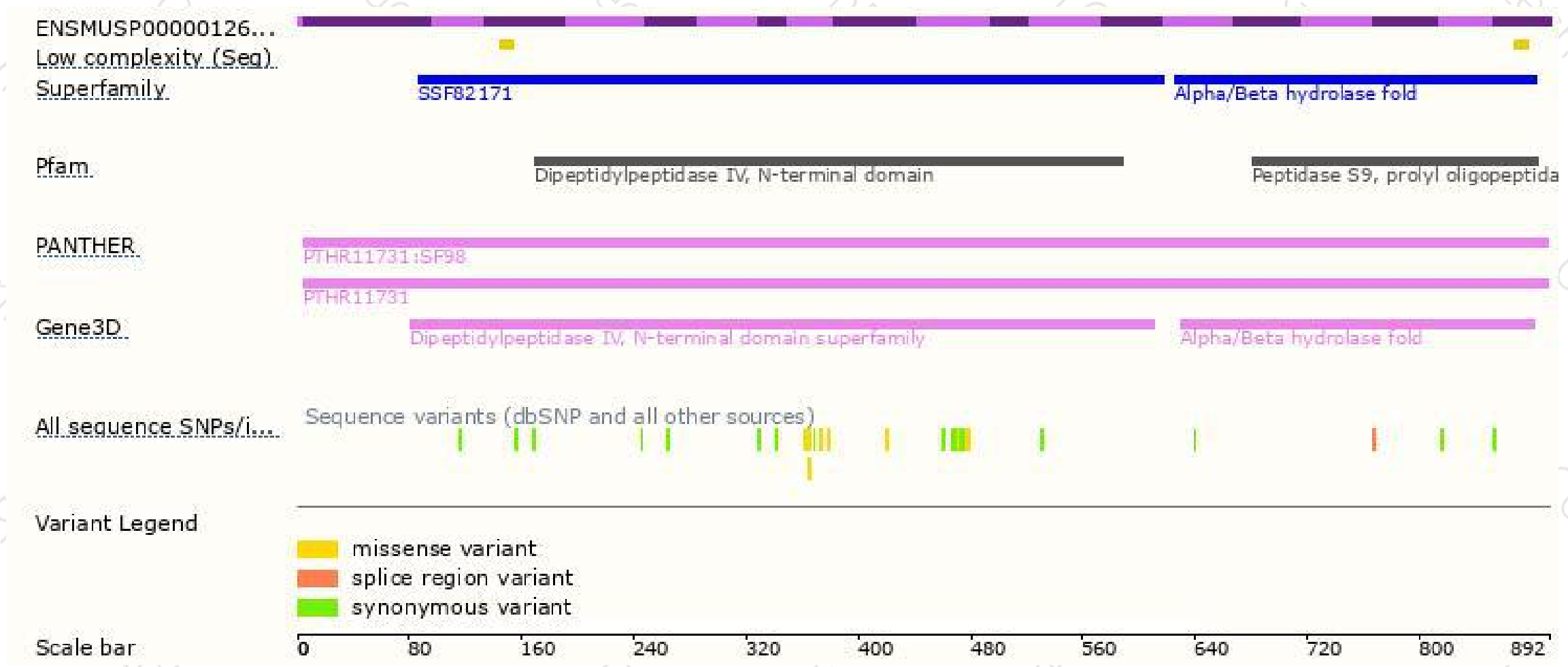
The strategy is based on the design of *Dpp8-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

