

Dph5 Cas9-CKO Strategy

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Project Overview

Project Name

Dph5

Project type

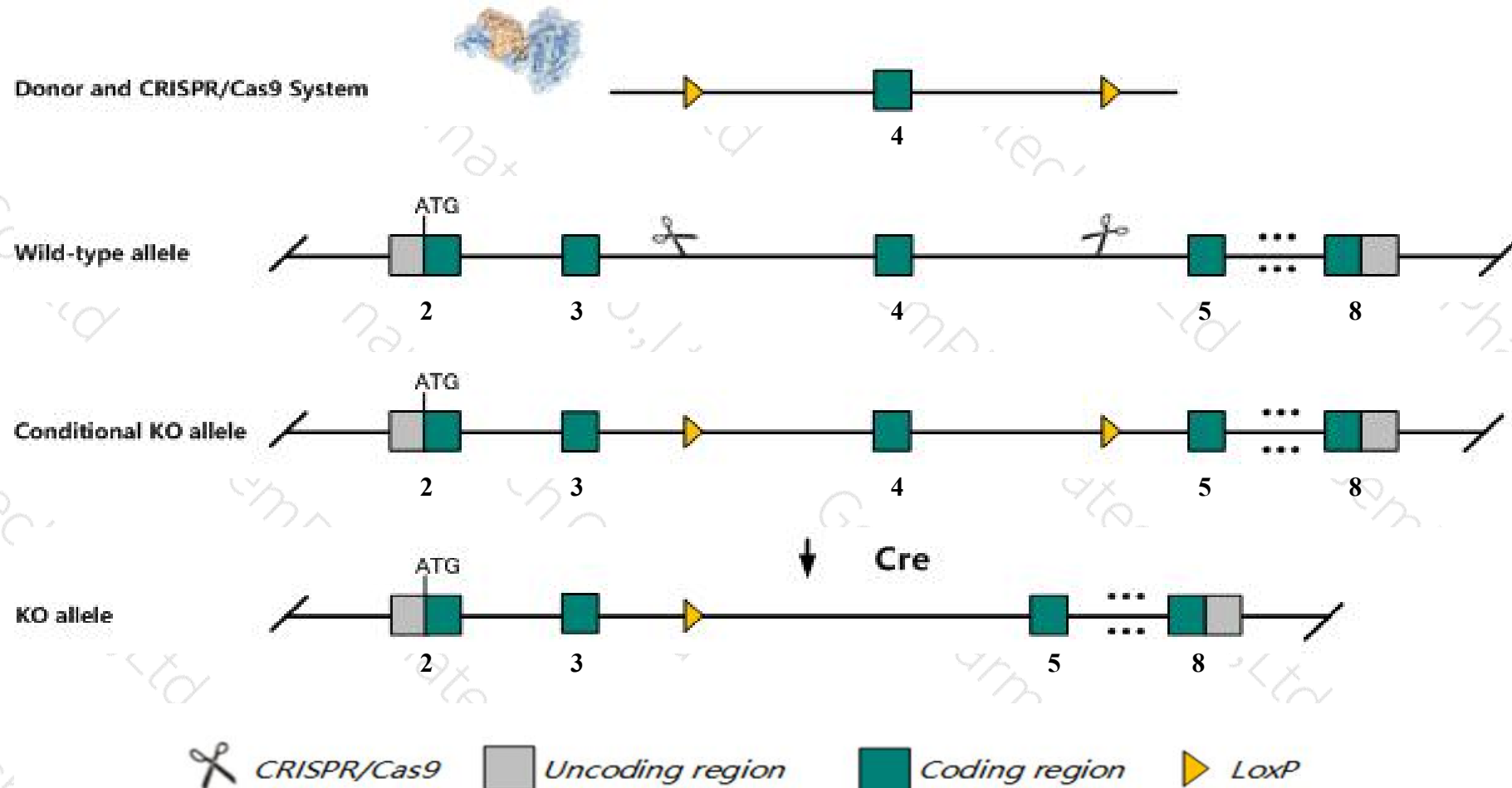
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dph5* gene. The schematic diagram is as follows:



Technical routes

- The *Dph5* gene has 8 transcripts. According to the structure of *Dph5* gene, exon4 of *Dph5-201* (ENSMUST00000043342.9) transcript is recommended as the knockout region. The region contains 109bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dph5* 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 *Dph5* gene is located on the Chr3. 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)

Dph5 diphthamide biosynthesis 5 [Mus musculus (house mouse)]

Gene ID: 69740, updated on 13-Mar-2020

Summary



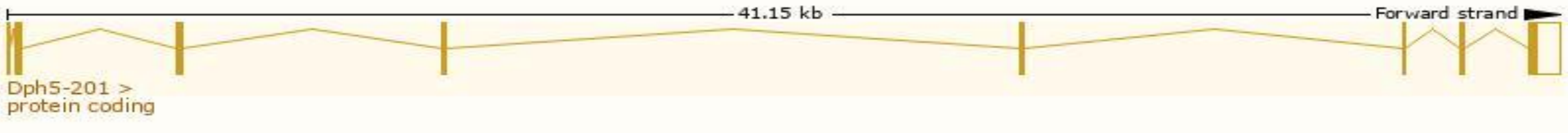
Official Symbol	Dph5 provided by MGI
Official Full Name	diphthamide biosynthesis 5 provided by MGI
Primary source	MGI:MGI:1916990
See related	Ensembl:ENSMUSG00000033554
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410012M04Rik, AU045680, C80186
Expression	Ubiquitous expression in liver E14 (RPKM 6.2), CNS E11.5 (RPKM 5.5) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

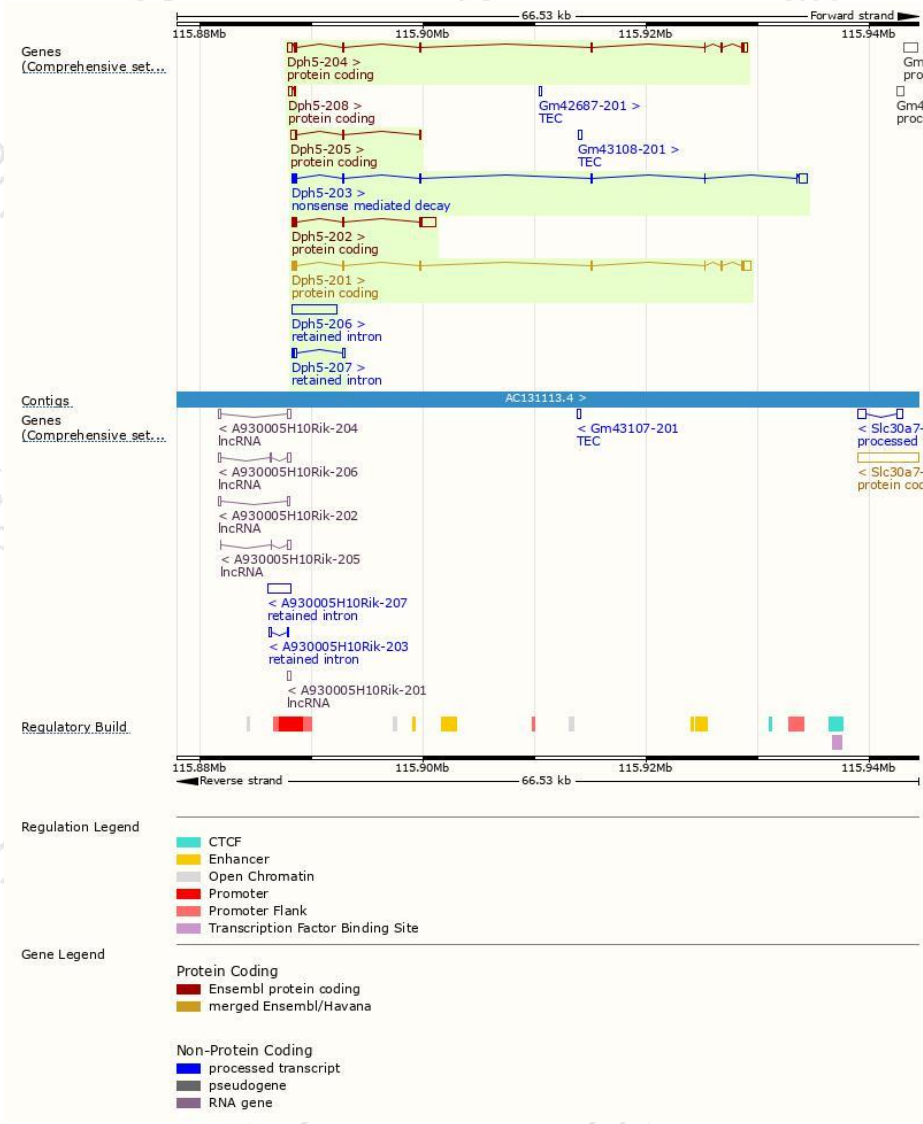
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dph5-201	ENSMUST00000043342.9	1576	281aa	Protein coding	CCDS17782	Q9CWQ0	TSL:1 GENCODE basic APPRIS P1
Dph5-204	ENSMUST000000189799.6	1558	281aa	Protein coding	CCDS17782	Q9CWQ0	TSL:5 GENCODE basic APPRIS P1
Dph5-202	ENSMUST000000106505.7	1836	145aa	Protein coding	-	Q8BG20	TSL:1 GENCODE basic
Dph5-205	ENSMUST000000196804.4	659	114aa	Protein coding	-	A0A0G2JE69	CDS 3' incomplete TSL:2
Dph5-208	ENSMUST000000200258.1	351	5aa	Protein coding	-	-	CDS 3' incomplete TSL:3
Dph5-203	ENSMUST000000185098.7	1438	177aa	Nonsense mediated decay	-	V9GXP1	TSL:1
Dph5-206	ENSMUST000000197561.1	4082	No protein	Retained intron	-	-	TSL:NA
Dph5-207	ENSMUST000000199970.1	520	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Dph5-201* 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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