

Dph7 Cas9-CKO Strategy

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Project Overview

Project Name

Dph7

Project type

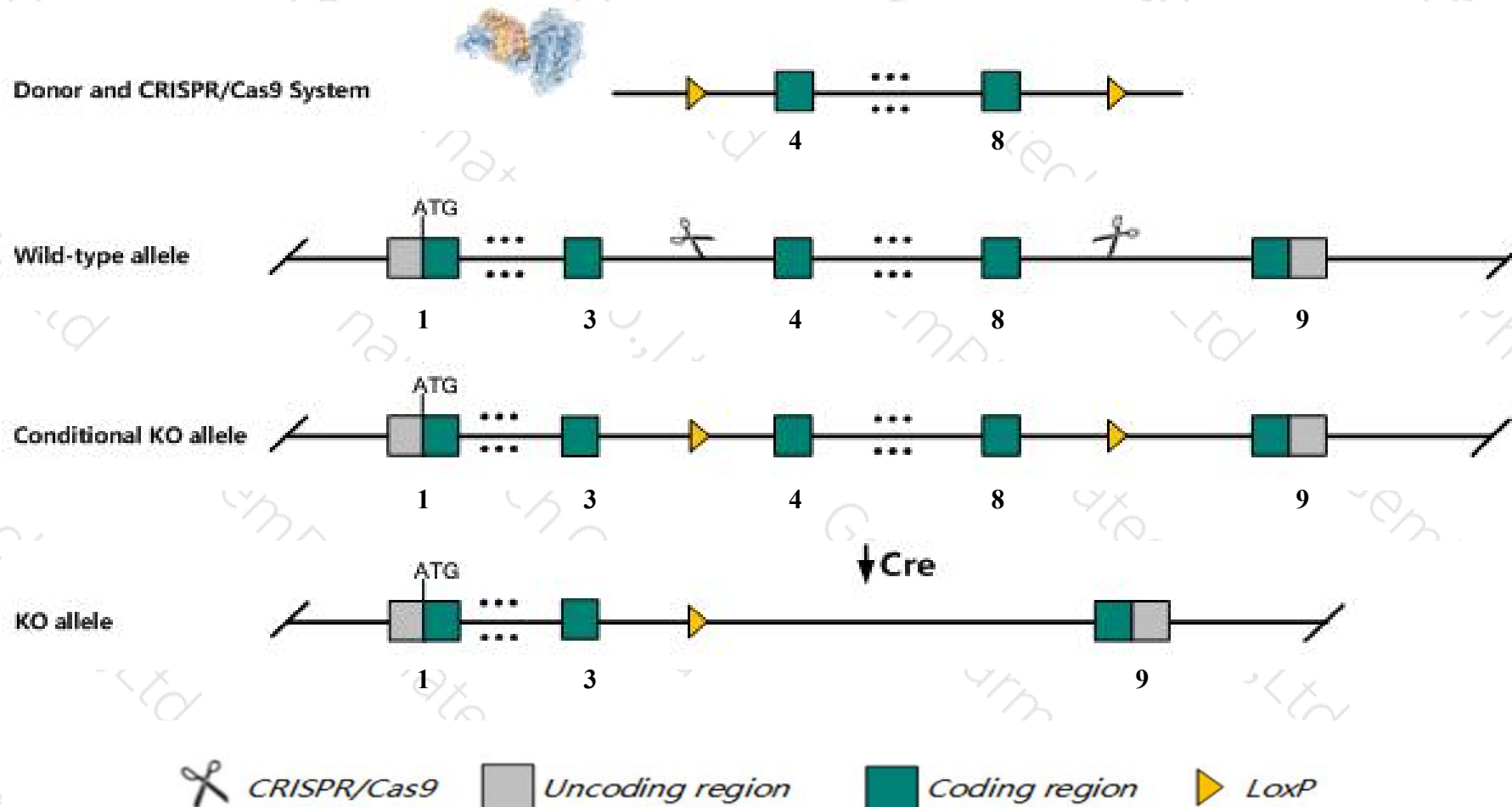
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dph7* gene. The schematic diagram is as follows:



- The *Dph7* gene has 7 transcripts. According to the structure of *Dph7* gene, exon4-exon8 of *Dph7-201* (ENSMUST00000028351.8) transcript is recommended as the knockout region. The region contains 577bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dph7* 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 *Dph7* gene is located on the Chr2. 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)

Dph7 diphthamine biosynthesis 7 [Mus musculus (house mouse)]

Gene ID: 67228, updated on 13-Mar-2020

Summary



Official Symbol	Dph7 provided by MGI
Official Full Name	diphthamine biosynthesis 7 provided by MGI
Primary source	MGI:MGI:1914478
See related	Ensembl:ENSMUSG00000026975
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	2810443J12Rik, AW060693, Wdr85
Expression	Ubiquitous expression in CNS E18 (RPKM 6.3), limb E14.5 (RPKM 6.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

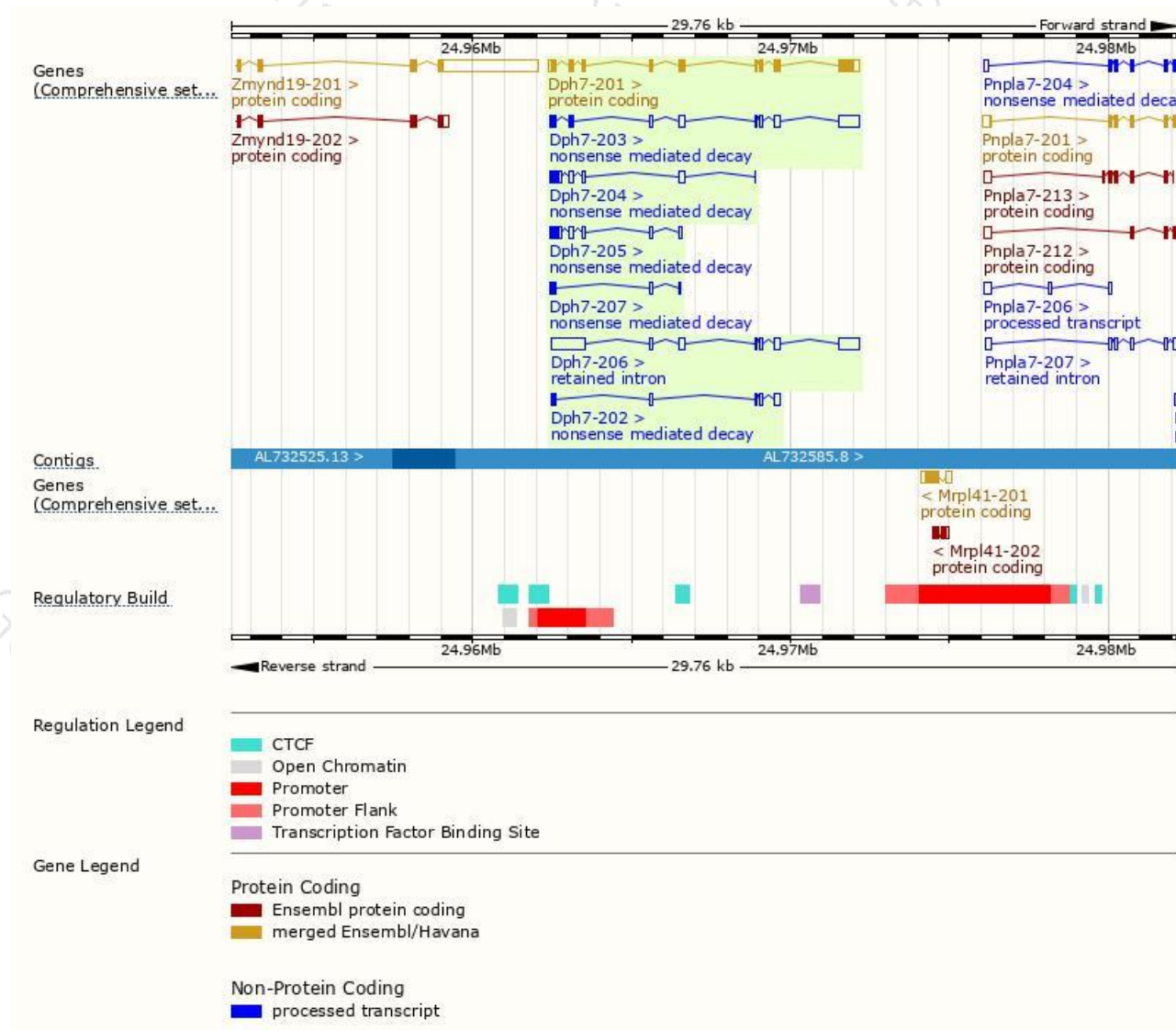
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dph7-201	ENSMUST00000028351.8	1666	477aa	Protein coding	CCDS15743	Q9CYU6	TSL:1 GENCODE basic APPRIS P1
Dph7-203	ENSMUST00000126909.7	1554	93aa	Nonsense mediated decay	-	A0A0A6YWH1	TSL:1
Dph7-204	ENSMUST00000135339.7	817	70aa	Nonsense mediated decay	-	A0A0A6YY79	TSL:5
Dph7-205	ENSMUST00000143253.7	760	70aa	Nonsense mediated decay	-	A0A0A6YY79	TSL:5
Dph7-202	ENSMUST00000124383.1	553	49aa	Nonsense mediated decay	-	A0A0A6YY05	TSL:2
Dph7-207	ENSMUST00000153375.7	300	49aa	Nonsense mediated decay	-	A0A0A6YY05	TSL:5
Dph7-206	ENSMUST00000146382.7	2296	No protein	Retained intron	-	-	TSL:1

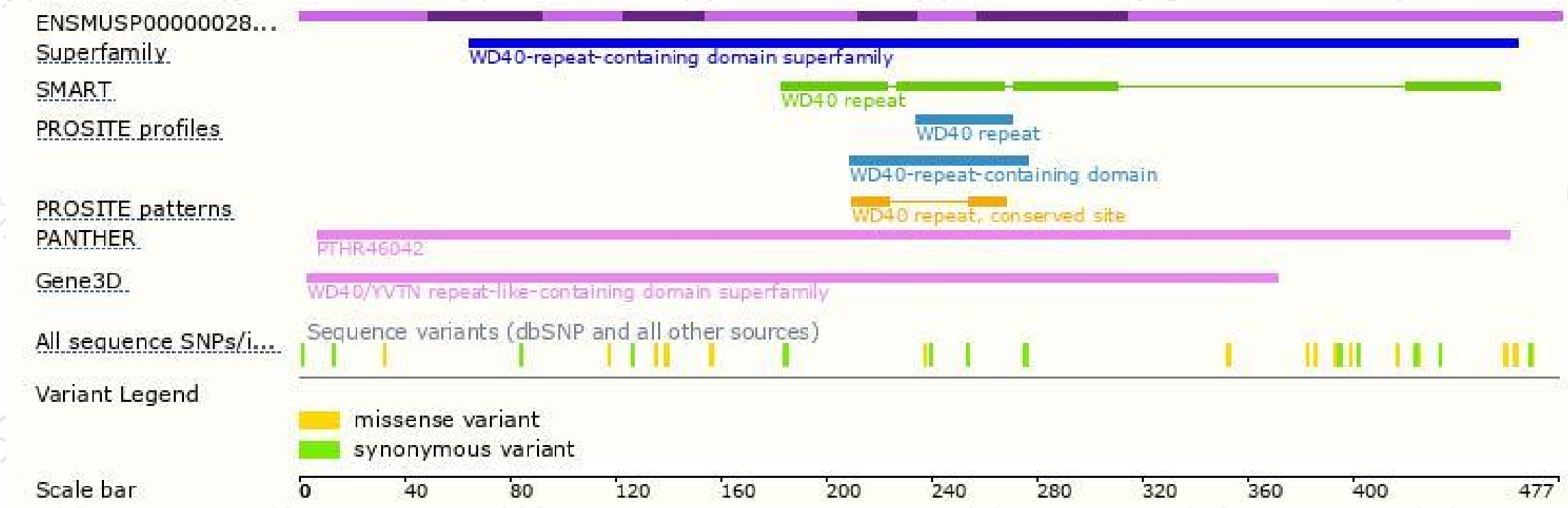
The strategy is based on the design of *Dph7-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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