

Ddx46 Cas9-CKO Strategy

Designer:Xiaojing Li

Reviewer:JiaYu

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Project Overview

Project Name

Ddx46

Project type

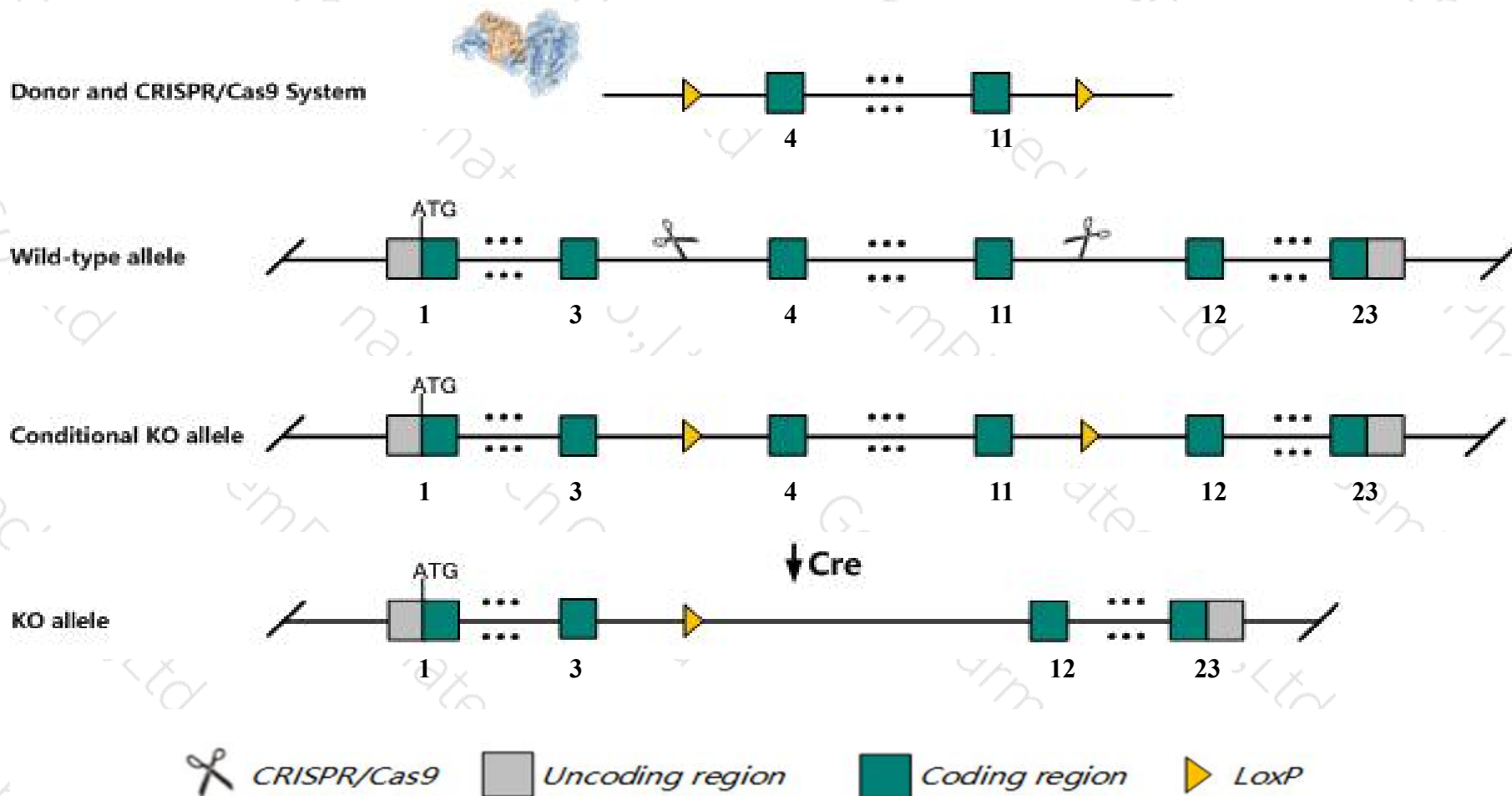
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ddx46* gene. The schematic diagram is as follows:



Technical routes

- The *Ddx46* gene has 5 transcripts. According to the structure of *Ddx46* gene, exon4-exon11 of *Ddx46-202* (ENSMUST00000172272.7) transcript is recommended as the knockout region. The region contains 1114bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ddx46* 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 *Ddx46* gene is located on the Chr13. 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)

Ddx46 DEAD (Asp-Glu-Ala-Asp) box polypeptide 46 [*Mus musculus* (house mouse)]

Gene ID: 212880, updated on 9-Mar-2020

Summary

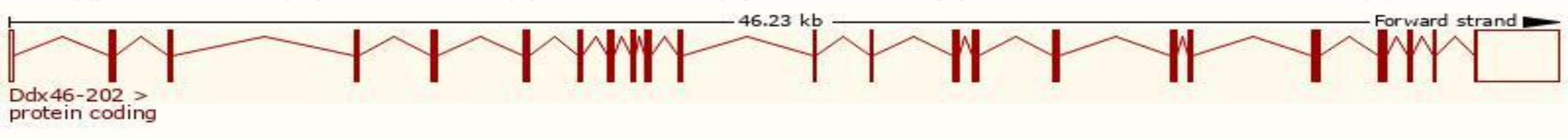
Official Symbol	Ddx46 provided by MGI
Official Full Name	DEAD (Asp-Glu-Ala-Asp) box polypeptide 46 provided by MGI
Primary source	MGI:MGI:1920895
See related	Ensembl:ENSMUSG00000021500
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI325430; AI957095; mKIAA0801; 2200005K02Rik; 8430438J23Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 24.8), CNS E14 (RPKM 15.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

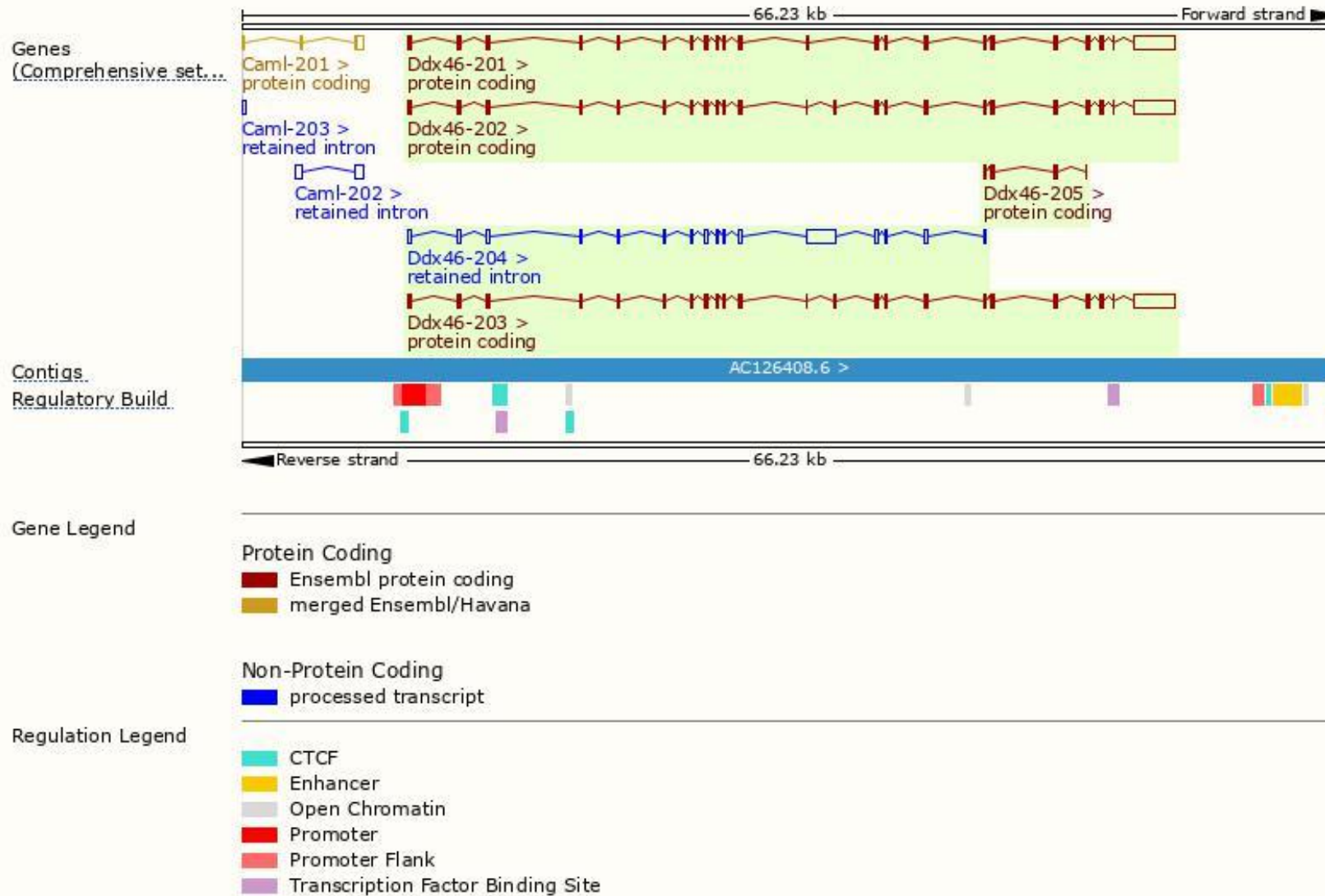
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ddx46-202	ENSMUST00000172272.7	5676	1032aa	Protein coding	CCDS70464	Q569Z5	TSL:5 GENCODE basic APPRIS P1
Ddx46-203	ENSMUST00000223736.1	5612	1032aa	Protein coding	CCDS70464	Q569Z5	GENCODE basic APPRIS P1
Ddx46-201	ENSMUST00000099479.3	5664	1028aa	Protein coding	-	F8WHR6	TSL:5 GENCODE basic
Ddx46-205	ENSMUST00000231097.1	432	144aa	Protein coding	-	A0A2R8VHK2	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Ddx46-204	ENSMUST00000224551.1	4056	No protein	Retained intron	-	-	

The strategy is based on the design of *Ddx46-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

