

Dennd11 Cas9-CKO Strategy

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Project Overview

Project Name

Dennd11

Project type

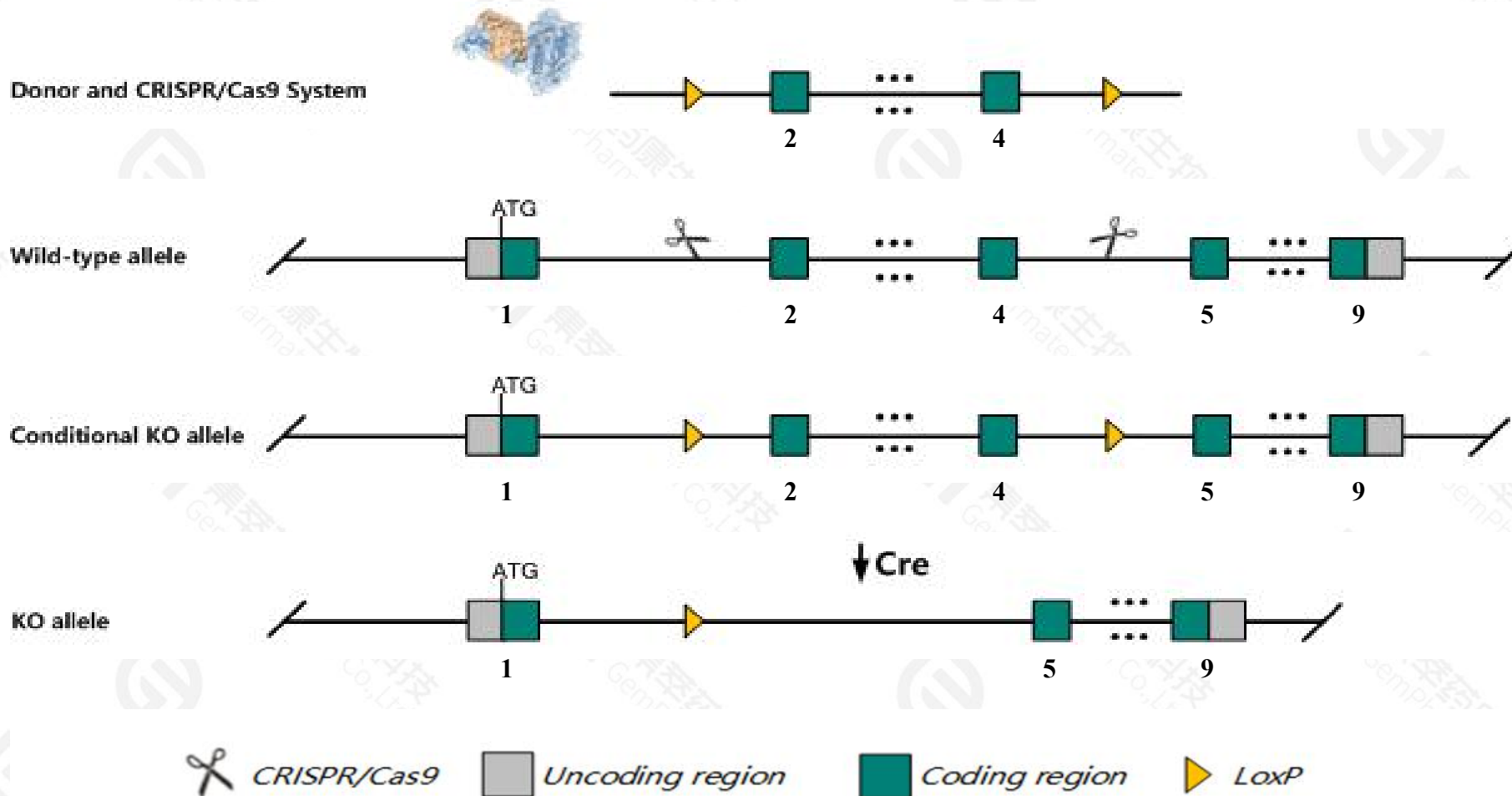
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dennd11* gene. The schematic diagram is as follows:



Technical routes

- The *Dennd11* gene has 4 transcripts. According to the structure of *Dennd11* gene, exon2-exon4 of *Dennd11* -202(ENSMUST00000101492.9) transcript is recommended as the knockout region. The region contains 413bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dennd11* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 *Dennd11* gene is located on the Chr6. 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)

Dennd11 DENN domain containing 11 [Mus musculus (house mouse)]

Gene ID: 243780, updated on 13-Mar-2020

Summary



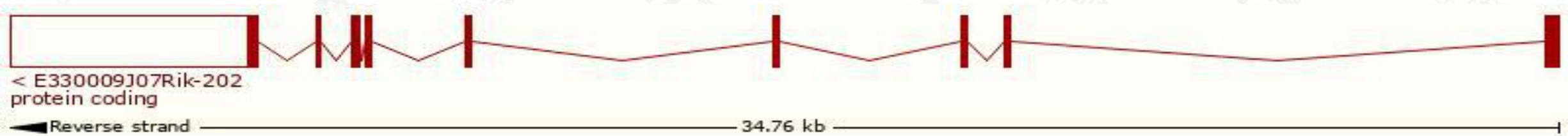
Official Symbol	Dennd11 provided by MGI
Official Full Name	DENN domain containing 11 provided by MGI
Primary source	MGI:MGI:2444256
See related	Ensembl:ENSMUSG00000037172
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI841796, E330009J07Rik, Lchn, mKIAA1147
Expression	Broad expression in cerebellum adult (RPKM 13.8), cortex adult (RPKM 7.2) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

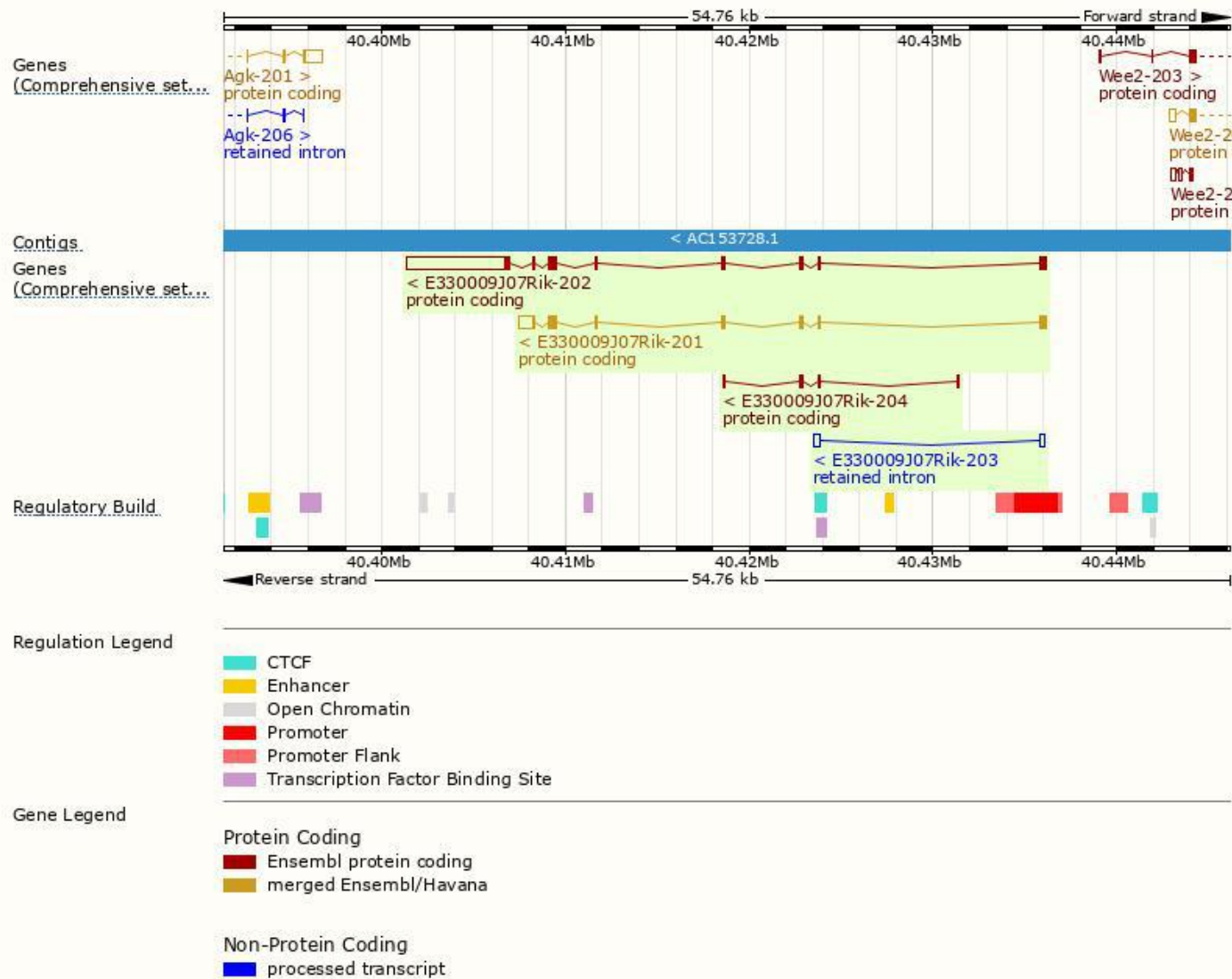
The gene has 4 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
E330009J07Rik-202	ENSMUST00000101492.9	6742	455aa	Protein coding	-	Q3UHG7	TSL:1 GENCODE basic APPRIS P1
E330009J07Rik-201	ENSMUST00000039008.9	1949	391aa	Protein coding	-	Q3UHG7	TSL:1 GENCODE basic
E330009J07Rik-204	ENSMUST00000201712.1	411	137aa	Protein coding	-	A0A0J9YTZ0	CDS 5' and 3' incomplete TSL:3
E330009J07Rik-203	ENSMUST00000200994.1	606	No protein	Retained intron	-	-	TSL:2

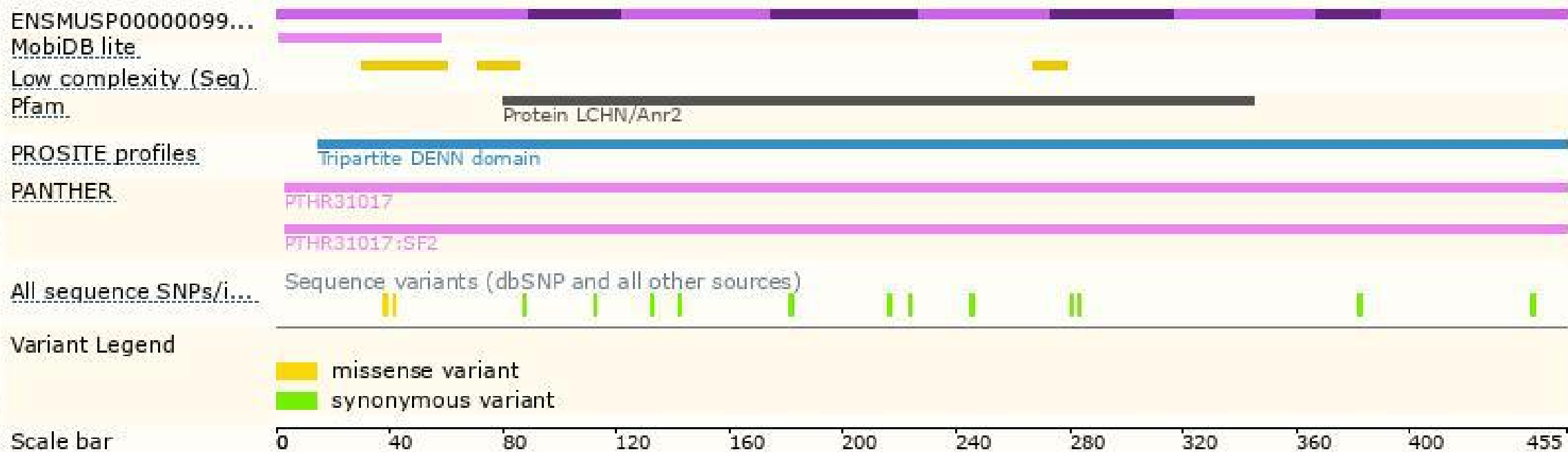
The strategy is based on the design of *Dennd11 -202* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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