

Dennd4b Cas9-KO Strategy

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Project Overview



Project Name

Dennd4b

Project type

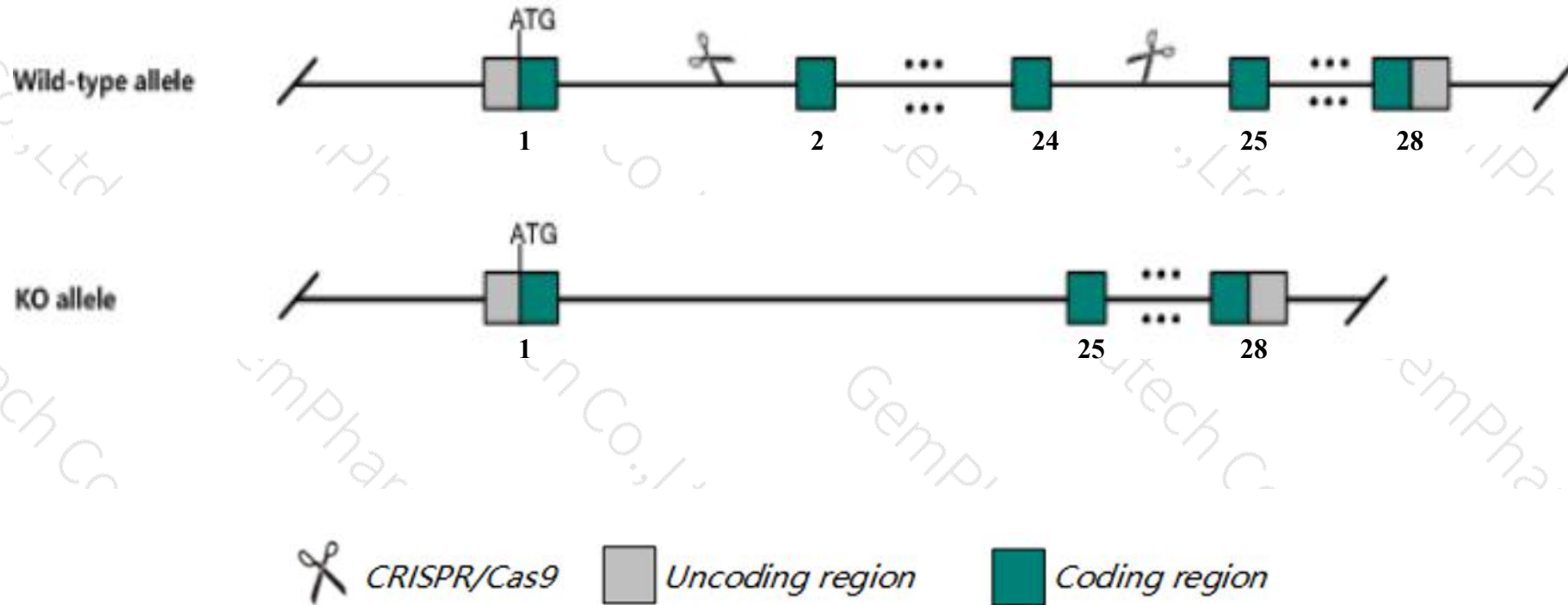
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dennd4b* gene. The schematic diagram is as follows:



- The *Dennd4b* gene has 7 transcripts. According to the structure of *Dennd4b* gene, exon2-exon24 of *Dennd4b-201*(ENSMUST00000098914.9) transcript is recommended as the knockout region. The region contains 4019bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dennd4b* gene. The brief process is as follows: CRISPR/Cas9 system 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 region contain the Mir7012 gene, which may delet it after Cre.
- The *Dennd4b* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Dennd4b DENN/MADD domain containing 4B [Mus musculus (house mouse)]

Gene ID: 229541, updated on 13-Mar-2020

Summary

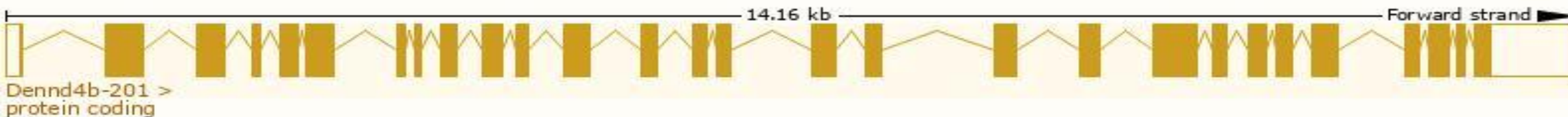
Official Symbol	Dennd4b provided by MGI
Official Full Name	DENN/MADD domain containing 4B provided by MGI
Primary source	MGI:MGI:2446201
See related	Ensembl:ENSMUSG00000042404
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Broad expression in spleen adult (RPKM 39.3), thymus adult (RPKM 27.8) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

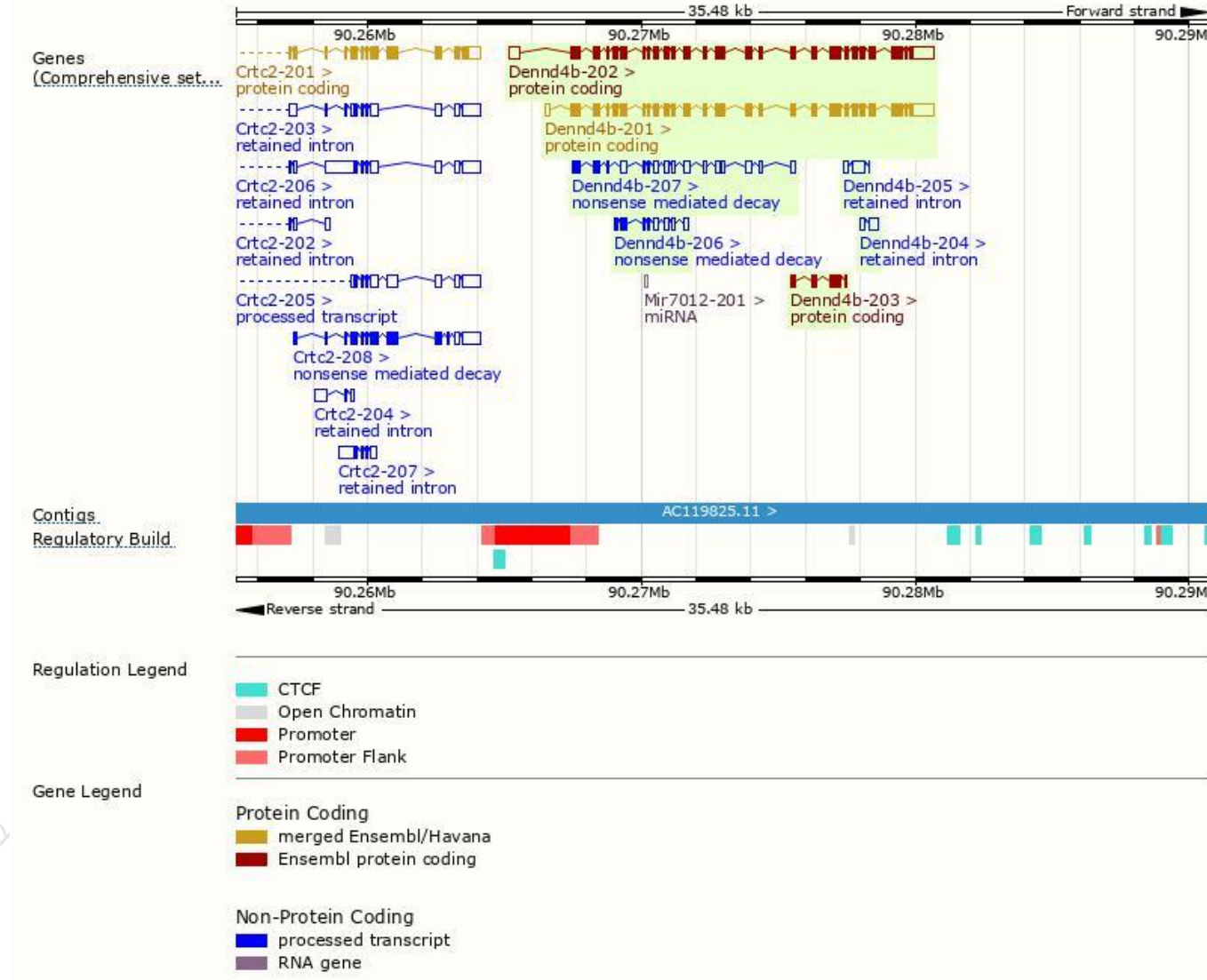
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dennd4b-201	ENSMUST00000098914.9	5423	1510aa	Protein coding	CCDS38502	A0A0R4J172	TSL:1 GENCODE basic APPRIS P2
Dennd4b-202	ENSMUST00000129564.7	5647	1499aa	Protein coding	-	Q3U1Y4	TSL:5 GENCODE basic APPRIS ALT2
Dennd4b-203	ENSMUST00000138376.1	792	264aa	Protein coding	-	F6RXE7	CDS 5' and 3' incomplete TSL:3
Dennd4b-207	ENSMUST00000156358.7	2551	207aa	Nonsense mediated decay	-	F6W646	CDS 5' incomplete TSL:5
Dennd4b-206	ENSMUST00000151648.1	1073	158aa	Nonsense mediated decay	-	F6RPS8	CDS 5' incomplete TSL:5
Dennd4b-205	ENSMUST00000143803.1	569	No protein	Retained intron	-	-	TSL:3
Dennd4b-204	ENSMUST00000141139.1	482	No protein	Retained intron	-	-	TSL:2

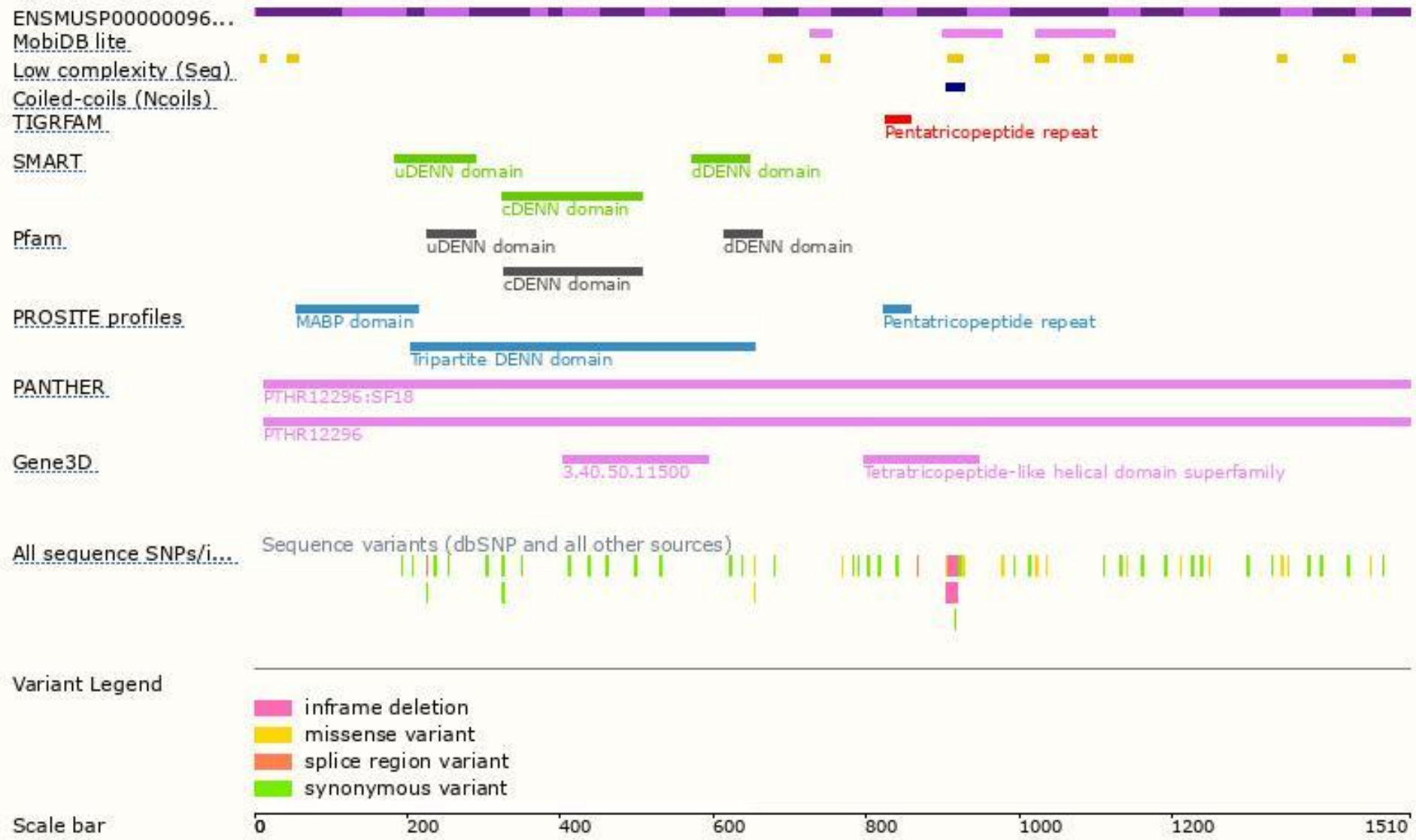
The strategy is based on the design of *Dennd4b-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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