

# *Dennd1a* Cas9-KO Strategy

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**Reviewer:**

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# Project Overview

**Project Name**

***Dennd1a***

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dennd1a* gene. The schematic diagram is as follows:



- The *Dennd1a* gene has 11 transcripts. According to the structure of *Dennd1a* gene, exon2 of *Dennd1a-201* (ENSMUST00000102787.9) transcript is recommended as the knockout region. The region contains 71bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dennd1a* gene. The brief process is as follows: CRISPR/Cas9 syst

- The *Dennd1a* 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.
- Transcript *Dennd1a-206* may not be affected.
- 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)

## Dennd1a DENN/MADD domain containing 1A [ *Mus musculus* (house mouse) ]

Gene ID: 227801, updated on 3-Sep-2019

### Summary

**Official Symbol** Dennd1a provided by [MGI](#)

**Official Full Name** DENN/MADD domain containing 1A provided by [MGI](#)

**Primary source** [MGI:MGI:2442794](#)

**See related** [Ensembl:ENSMUSG00000035392](#)

**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** connecdenn; 6030446I19Rik

**Expression** Ubiquitous expression in kidney adult (RPKM 10.2), adrenal adult (RPKM 9.6) and 28 other tissues [See more](#)

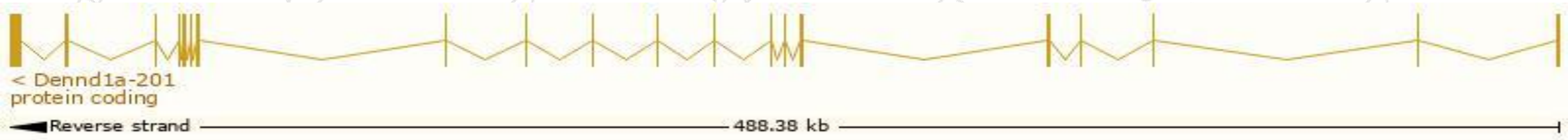
**Orthologs** [human](#) [all](#)

# Transcript information (Ensembl)

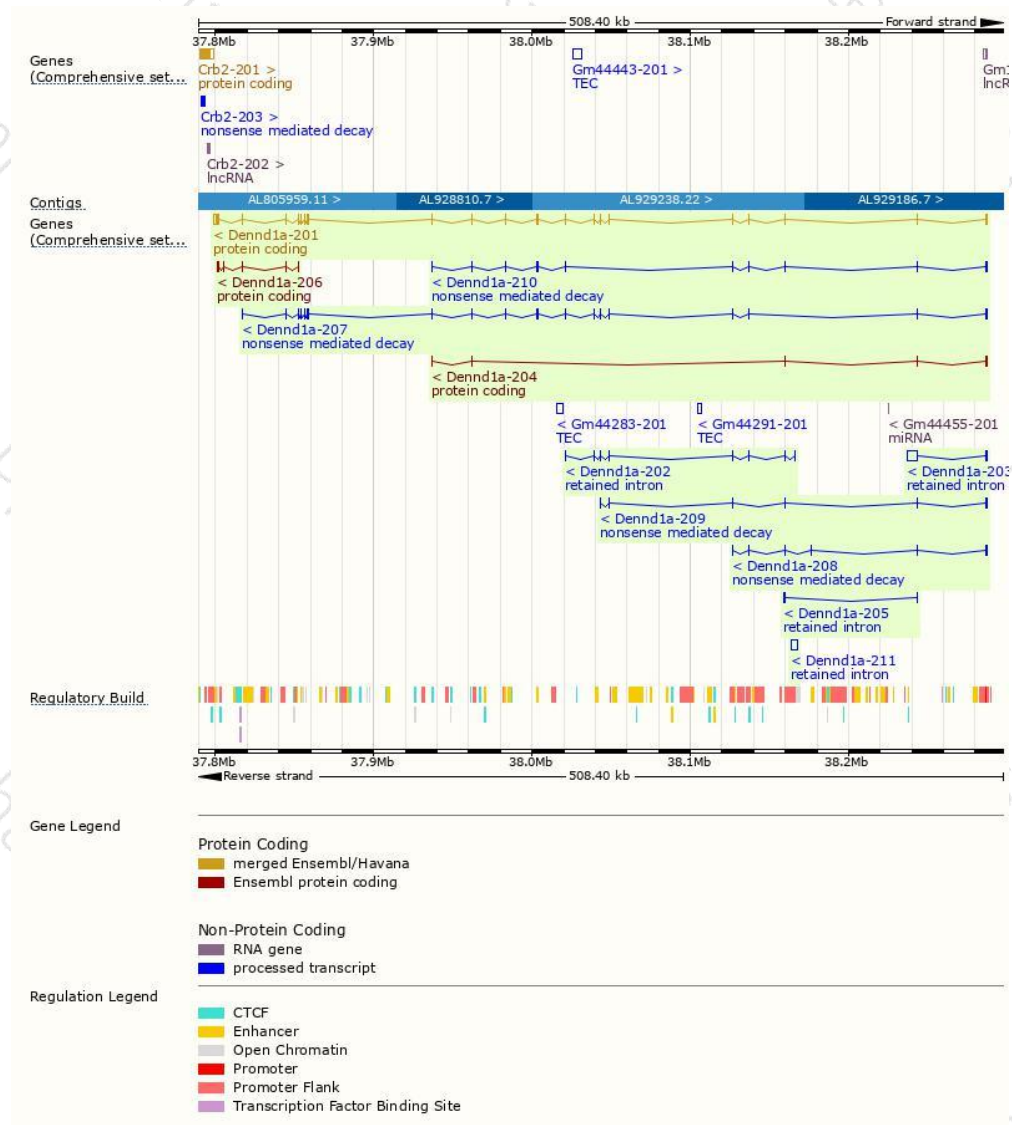
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dennd1a-201	<a href="#">ENSMUST00000102787.9</a>	4342	<a href="#">1016aa</a>	Protein coding	<a href="#">CCDS16007</a>	<a href="#">Q8K382</a>	TSL:1 GENCODE basic APPRIS P1
Dennd1a-206	<a href="#">ENSMUST00000136460.1</a>	833	<a href="#">277aa</a>	Protein coding	-	<a href="#">A2ALU3</a>	CDS 5' and 3' incomplete TSL:5
Dennd1a-204	<a href="#">ENSMUST00000130472.7</a>	374	<a href="#">105aa</a>	Protein coding	-	<a href="#">A2AUP6</a>	CDS 3' incomplete TSL:2
Dennd1a-207	<a href="#">ENSMUST00000140552.7</a>	1794	<a href="#">49aa</a>	Nonsense mediated decay	-	<a href="#">D6RHL0</a>	TSL:5
Dennd1a-210	<a href="#">ENSMUST00000150896.7</a>	1036	<a href="#">103aa</a>	Nonsense mediated decay	-	<a href="#">D6RH88</a>	TSL:3
Dennd1a-209	<a href="#">ENSMUST00000143095.7</a>	625	<a href="#">47aa</a>	Nonsense mediated decay	-	<a href="#">D6RI65</a>	TSL:3
Dennd1a-208	<a href="#">ENSMUST00000142813.1</a>	408	<a href="#">80aa</a>	Nonsense mediated decay	-	<a href="#">D6RHP6</a>	TSL:3
Dennd1a-203	<a href="#">ENSMUST00000128492.2</a>	6212	No protein	Retained intron	-	-	TSL:1
Dennd1a-211	<a href="#">ENSMUST00000205218.1</a>	4082	No protein	Retained intron	-	-	TSL:NA
Dennd1a-205	<a href="#">ENSMUST00000136116.1</a>	668	No protein	Retained intron	-	-	TSL:3
Dennd1a-202	<a href="#">ENSMUST00000126889.7</a>	652	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Dennd1a-201* transcript,The transcription is shown below

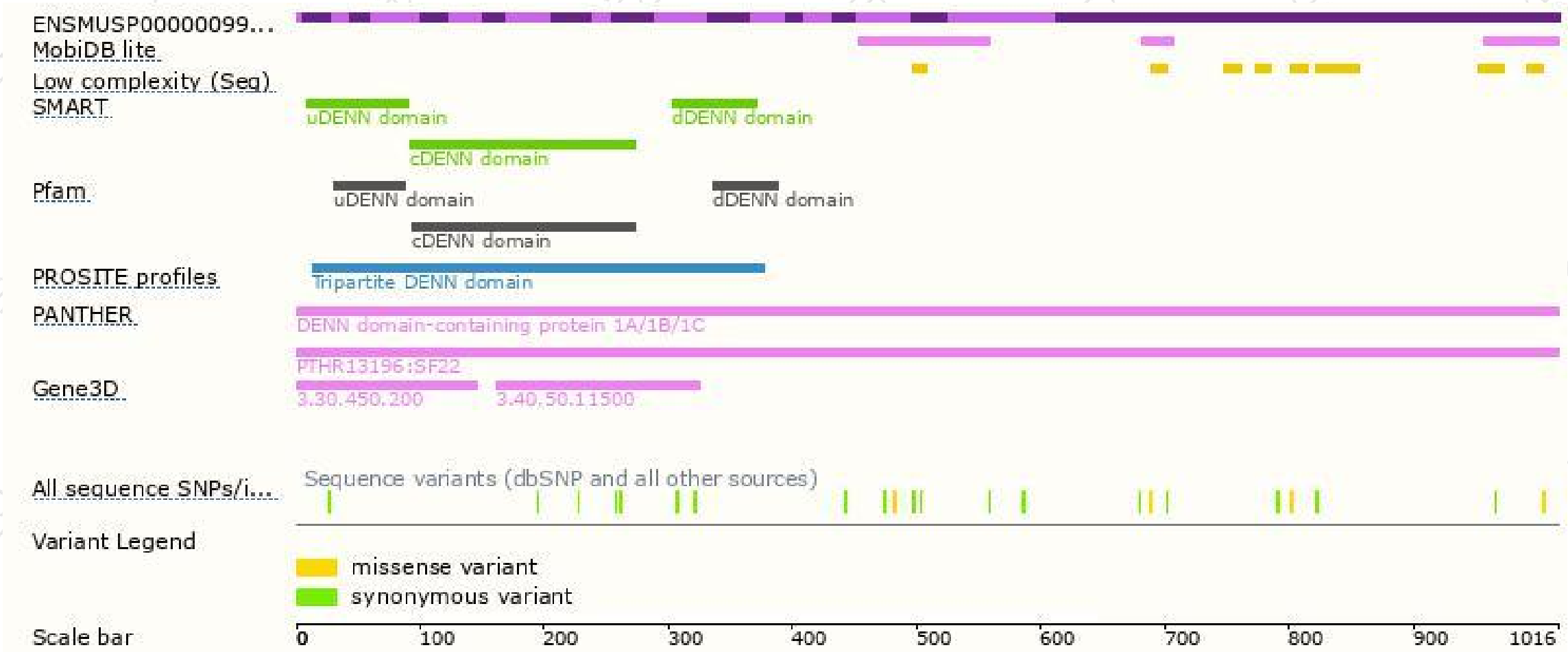


# Genomic location distribution





# Protein domain



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

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