

***Cadm2* Cas9-KO Strategy**

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Project Overview

Project Name

Cadm2

Project type

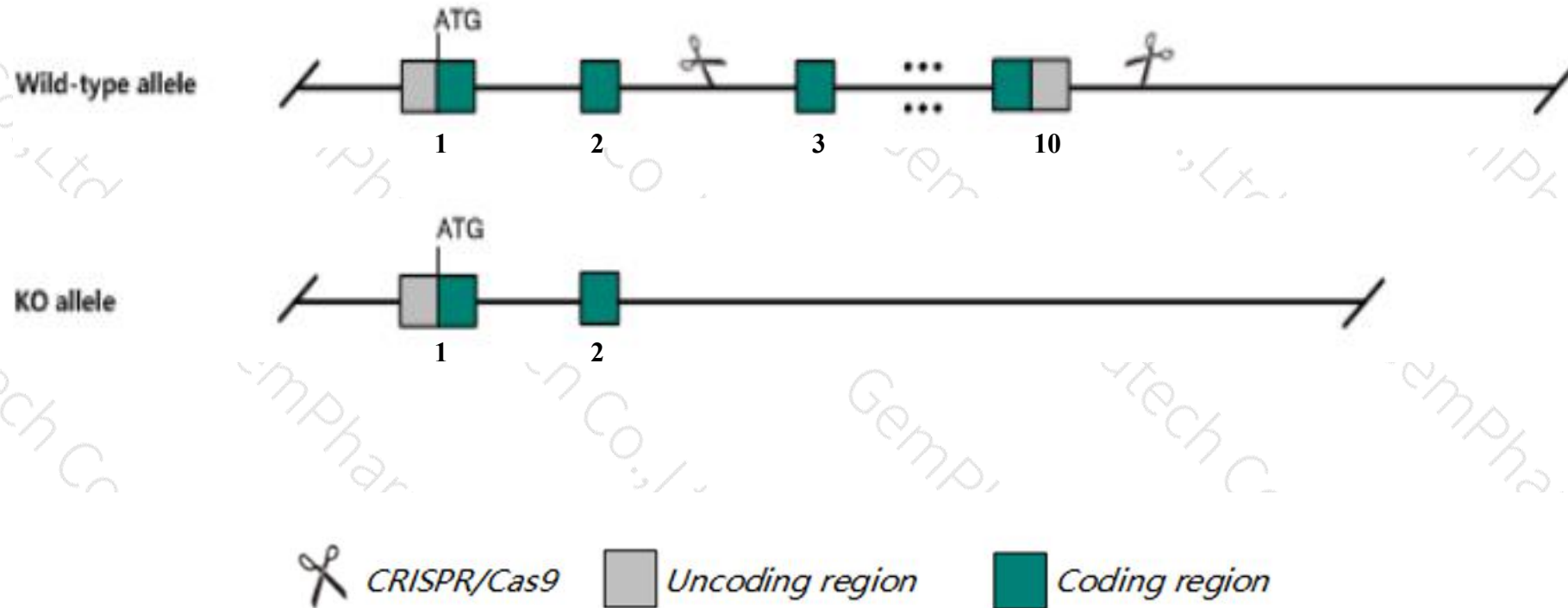
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cadm2* gene. The schematic diagram is as follows:



- The *Cadm2* gene has 6 transcripts. According to the structure of *Cadm2* gene, exon3-exon10 of *Cadm2*-202(ENSMUST00000120594.7) transcript is recommended as the knockout region. The region contains 1097bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cadm2* 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.

- According to the existing MGI data, mice with ubiquitous conditional deletion of the gene do not display any neurological abnormalities.
- The KO region contains functional region of the *Cadm2* gene. Knockout the region may affect the function of 1700010K23Rik gene.
- The *Cadm2* gene is located on the Chr16. 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)

Cadm2 cell adhesion molecule 2 [Mus musculus (house mouse)]

Gene ID: 239857, updated on 13-Mar-2020

Summary



Official Symbol	Cadm2 provided by MGI
Official Full Name	cell adhesion molecule 2 provided by MGI
Primary source	MGI:MGI:2442722
See related	Ensembl:ENSMUSG00000064115
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	2900078E11Rik, 9330131D06, A830029E02Rik, Igdf4d, Igsf4d, NECL3, SynCAM 2, SynCAM2
Expression	Biased expression in frontal lobe adult (RPKM 12.4), cortex adult (RPKM 11.9) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

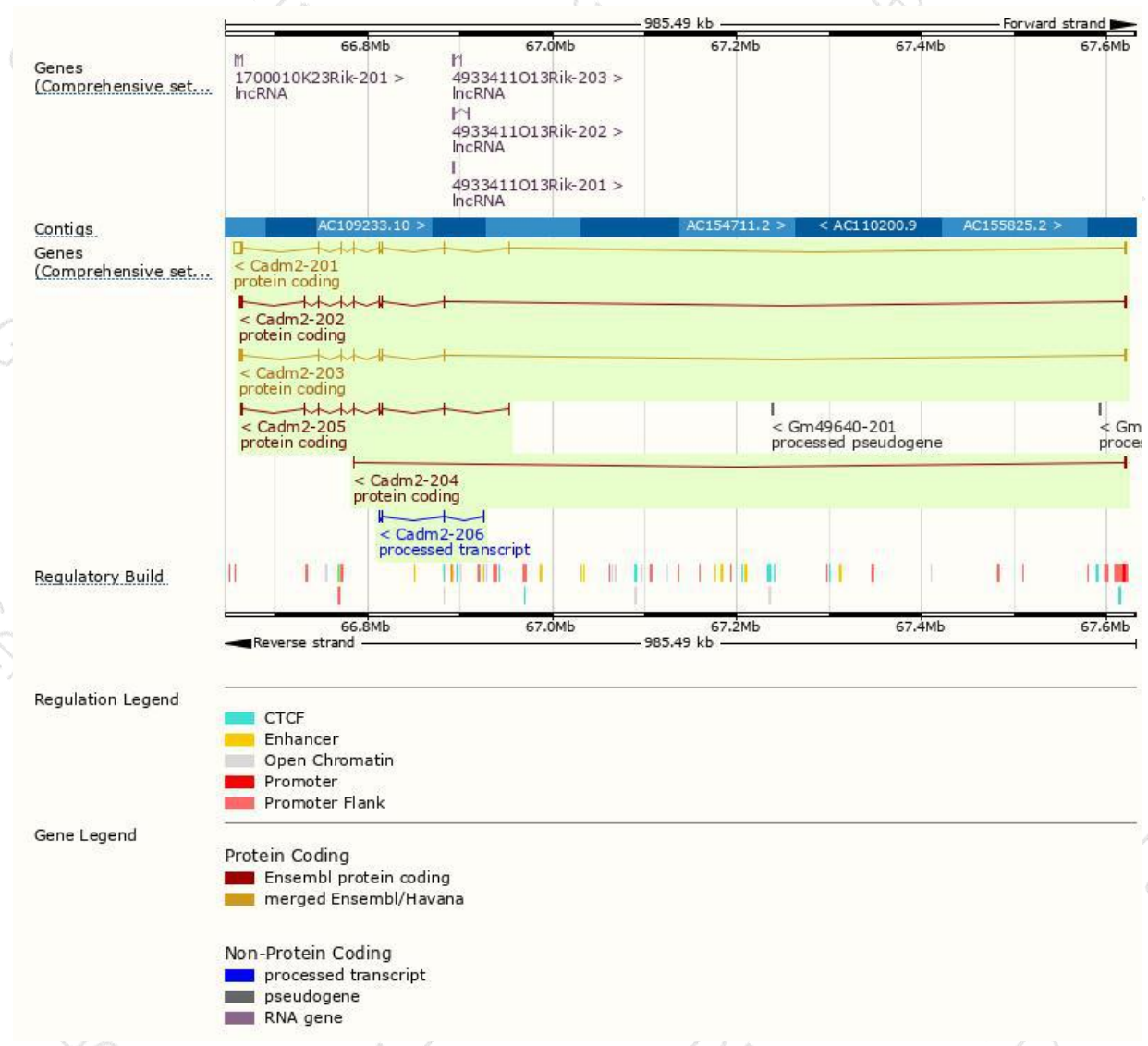
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cadm2-201	ENSMUST00000114292.7	9564	404aa	Protein coding	CCDS28270	Q8BLQ9	TSL:1 GENCODE basic APPRIS P3
Cadm2-202	ENSMUST00000120594.7	3248	435aa	Protein coding	CCDS84251	Q8BLQ9	TSL:5 GENCODE basic APPRIS ALT 1
Cadm2-203	ENSMUST00000120898.7	2768	395aa	Protein coding	CCDS49885	Q8BLQ9	TSL:1 GENCODE basic
Cadm2-205	ENSMUST00000128168.2	1308	435aa	Protein coding	-	G3UZM4	CDS 5' incomplete TSL:5
Cadm2-204	ENSMUST00000123266.1	422	53aa	Protein coding	-	D3Z0N3	CDS 3' incomplete TSL:5
Cadm2-206	ENSMUST00000141282.1	457	No protein	Processed transcript	-	-	TSL:3

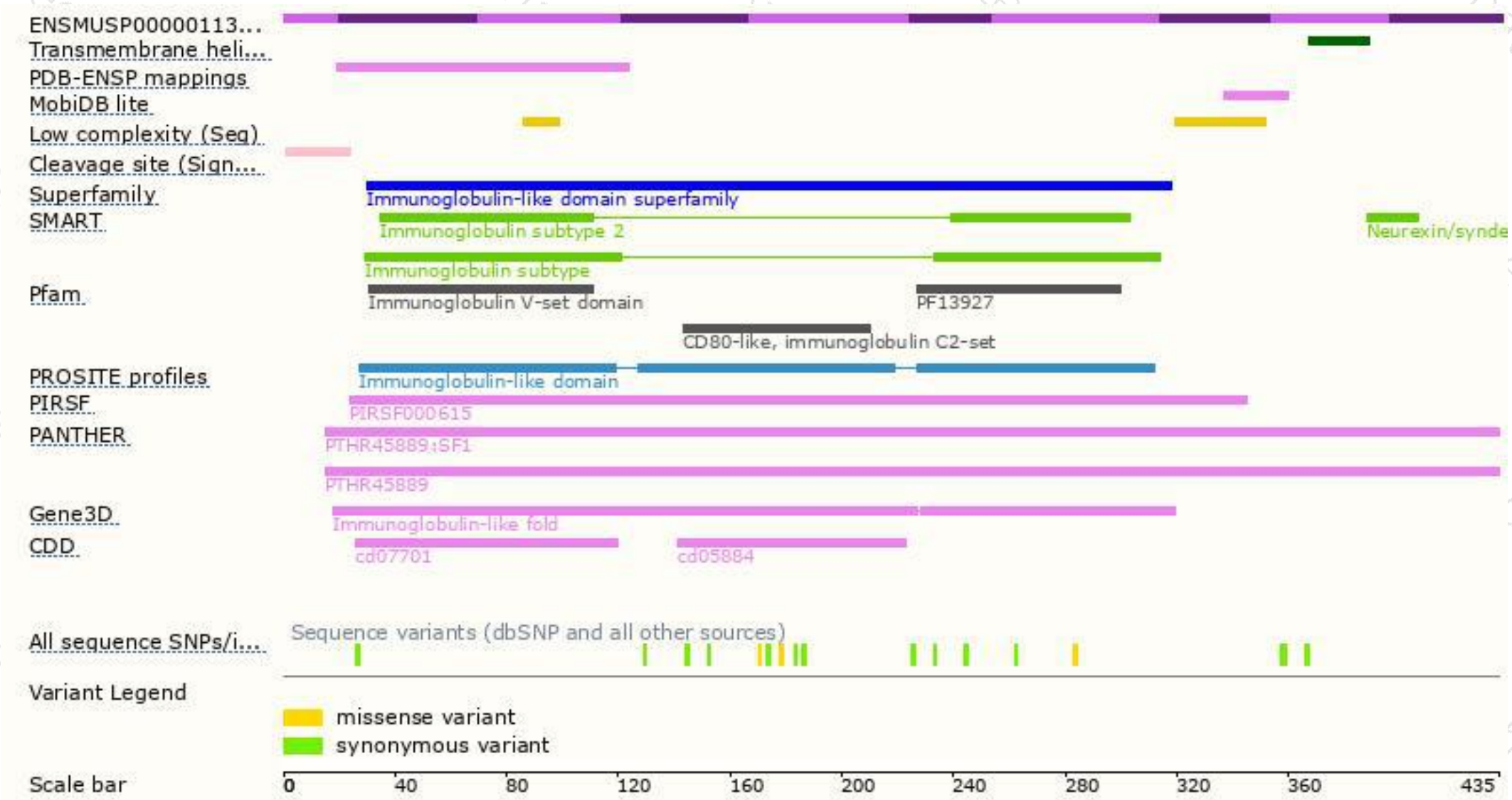
The strategy is based on the design of *Cadm2-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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