GemPharmatech™

Csmd2 Cas9-KO Strategy

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Overview

Target Gene Name

- Csmd2

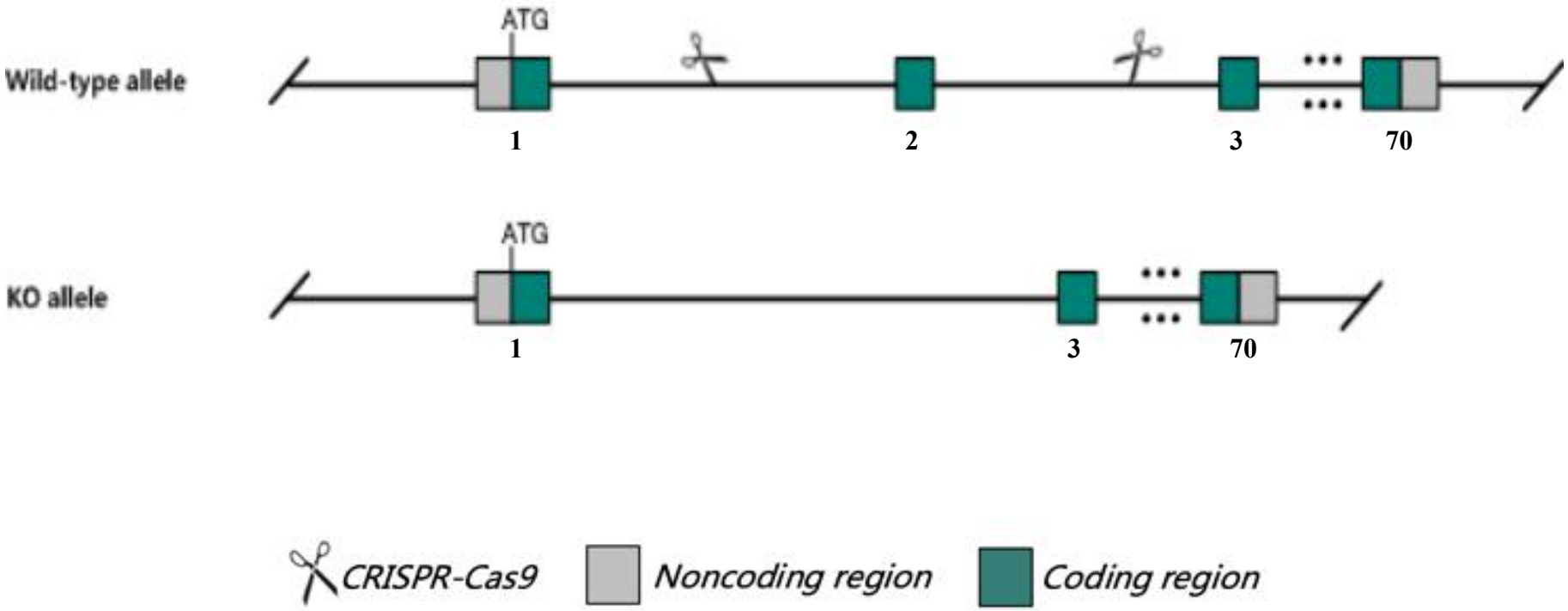
Project Type

- Cas9-KO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Technical Information

- The *Csmd2* gene has 6 transcripts. According to the structure of *Csmd2* gene, exon 2 of *Csmd2*-205 (ENSMUST00000184063.3) transcript is recommended as the knockout region. The region contains 217 bp coding sequence. Knocking out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Csmd2* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

Gene Information

Csmd2 CUB and Sushi multiple domains 2 [*Mus musculus* (house mouse)]

Download Datasets

Gene ID: 329942, updated on 7-Sep-2023

Summary

Official Symbol	Csmd2 provided by MGI
Official Full Name	CUB and Sushi multiple domains 2 provided by MGI
Primary source	MGI:MGI:2386401
See related	Ensembl:ENSMUSG00000028804 AllianceGenome:MGI:2386401
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm139
Summary	Is expressed in central nervous system and ganglia. Orthologous to human CSMD2 (CUB and Sushi multiple domains 2). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Biased expression in CNS E18 (RPKM 4.4), whole brain E14.5 (RPKM 3.9) and 6 other tissues See more
Orthologs	human all

NEW **Try the new Gene table**

Try the new Transcript table

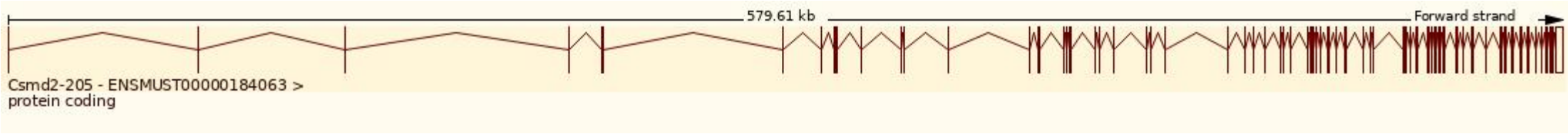
Source: https://www.ncbi.nlm.nih.gov/

Transcript Information

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

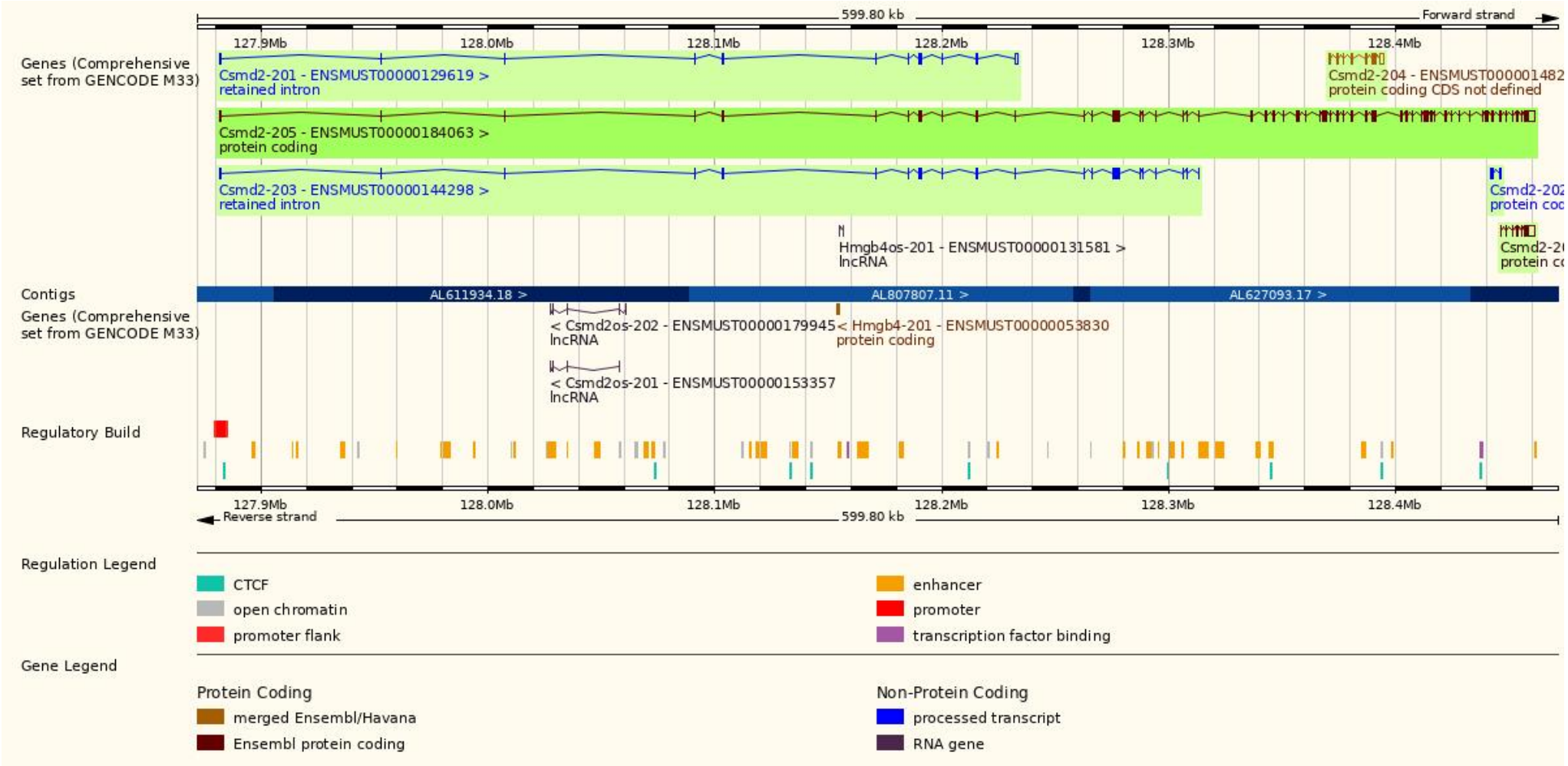
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000184063.3	Csmd2-205	13555	3611aa	Protein coding	CCDS84795	V9GX34	Ensembl Canonical GENCODE basic APPRIS P1 TSL:5
ENSMUST00000221199.2	Csmd2-206	3601	302aa	Protein coding		A0A1Y7VP35	TSL:5 CDS 5' incomplete
ENSMUST00000144298.2	Csmd2-203	4104	No protein	Retained intron		-	TSL:1
ENSMUST00000129619.8	Csmd2-201	3034	No protein	Retained intron		-	TSL:1
ENSMUST00000148247.2	Csmd2-204	3320	No protein	Protein coding CDS not defined		-	TSL:1
ENSMUST00000139561.2	Csmd2-202	686	No protein	Protein coding CDS not defined		-	TSL:3

The strategy is based on the design of *Csmd2*-205 transcript, the transcription is shown below:



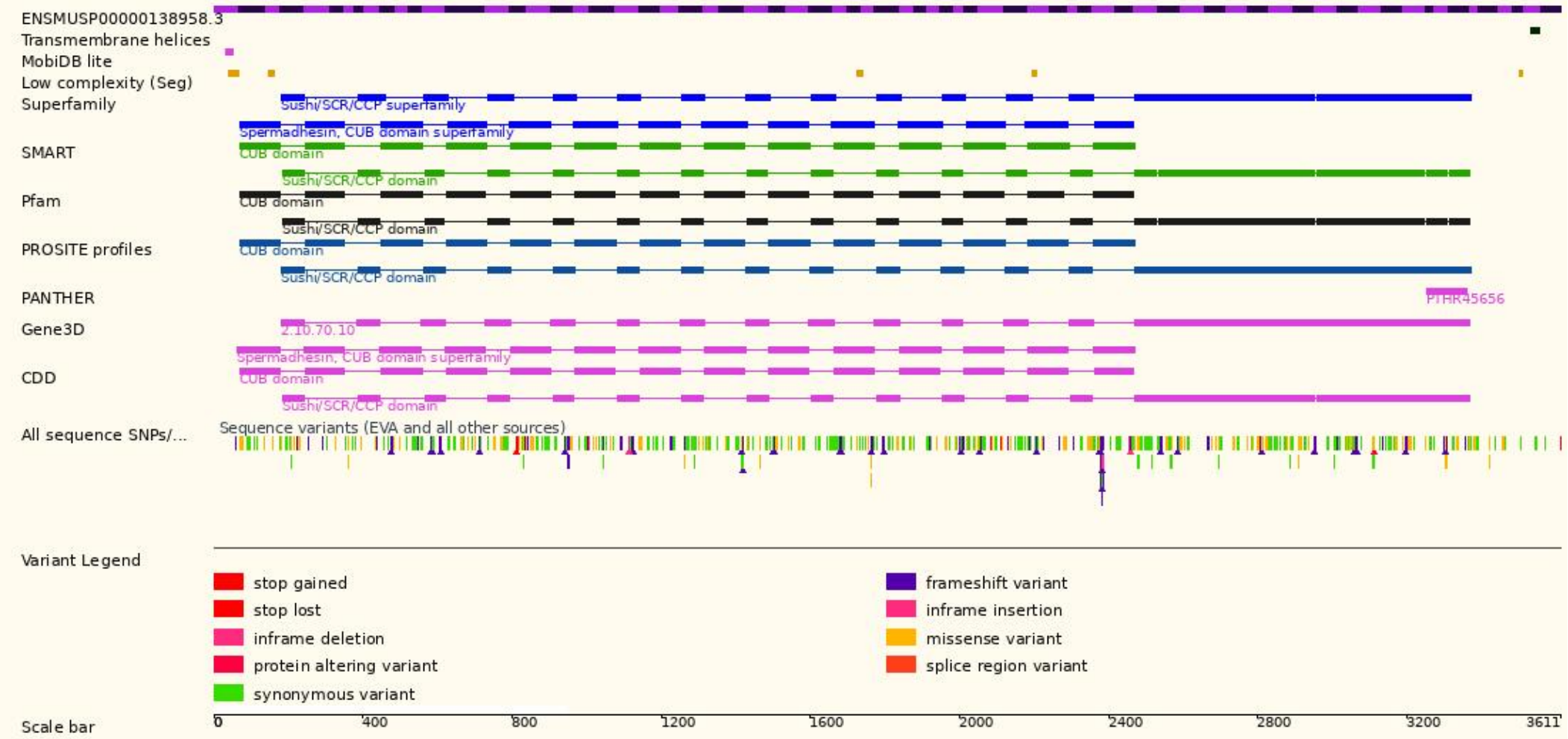
Source: https://www.ensembl.org

Genomic Information



Source: : https://www.ensembl.org

Protein Information



Source: : https://www.ensembl.org

Important Information

- Transcript *Csmd2*-202、*Csmd2*-204、*Csmd2*-206 may not be affected.
- *Csmd2* is located on Chr 4. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.