

***Susd4* Cas9-KO Strategy**

Designer: Zihe Cui

Reviewer: Huimin Su

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Project Overview

Project Name

Susd4

Project type

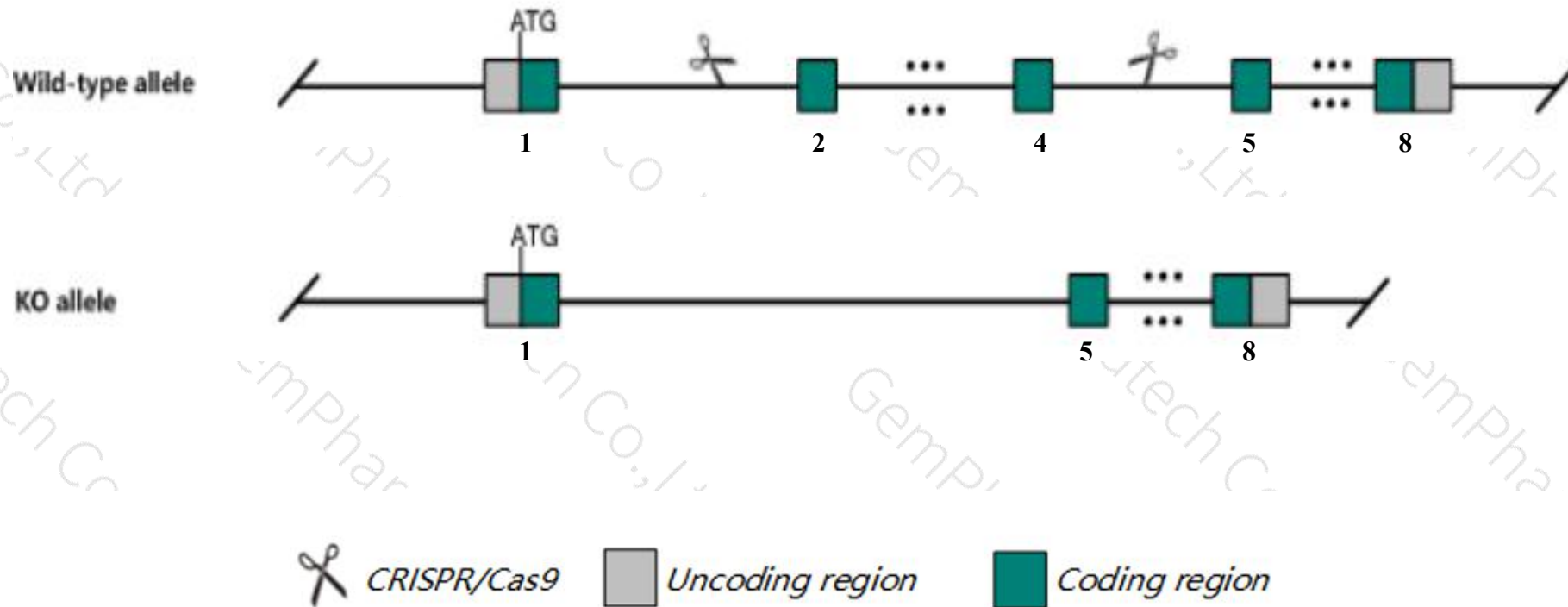
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Susd4* gene. The schematic diagram is as follows:



- The *Susd4* gene has 5 transcripts. According to the structure of *Susd4* gene, exon2-exon4 of *Susd4*-201(ENSMUST00000085724.4) transcript is recommended as the knockout region. The region contains 576bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Susd4* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 KO region deletes parts of the coding sequence, but does not result in frameshift.
- The *Susd4* gene is located on the Chr1. 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)

Susd4 sushi domain containing 4 [Mus musculus (house mouse)]

Gene ID: 96935, updated on 13-Mar-2020

Summary



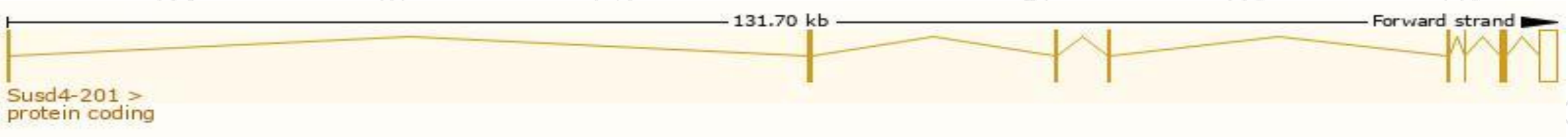
Official Symbol	Susd4 provided by MGI
Official Full Name	sushi domain containing 4 provided by MGI
Primary source	MGI:MGI:2138351
See related	Ensembl:ENSMUSG00000038576
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI848994, E430021N18Rik, N28096
Expression	Biased expression in frontal lobe adult (RPKM 29.8), cortex adult (RPKM 26.8) and 13 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

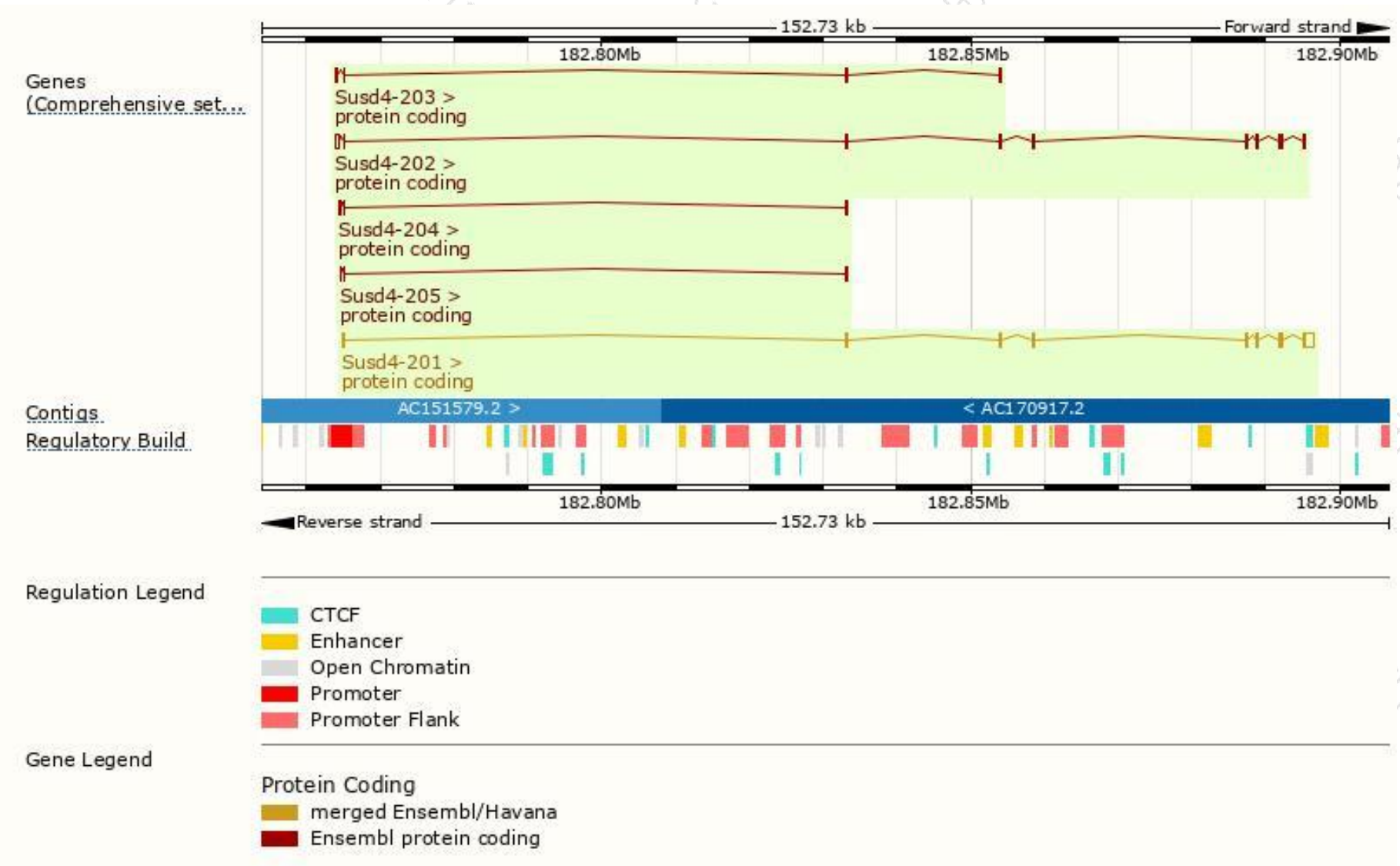
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Susd4-201	ENSMUST00000085724.4	2983	490aa	Protein coding	CCDS15590	Q8BH32	TSL:1 GENCODE basic APPRIS P1
Susd4-202	ENSMUST00000153348.7	1898	490aa	Protein coding	CCDS15590	Q8BH32	TSL:5 GENCODE basic APPRIS P1
Susd4-203	ENSMUST00000155229.6	734	148aa	Protein coding	-	A0A0A6YY90	CDS 3' incomplete TSL:3
Susd4-204	ENSMUST00000193660.5	559	104aa	Protein coding	-	A0A0A6YX15	CDS 3' incomplete TSL:5
Susd4-205	ENSMUST00000194981.1	554	113aa	Protein coding	-	A0A0A6YWB1	CDS 3' incomplete TSL:5

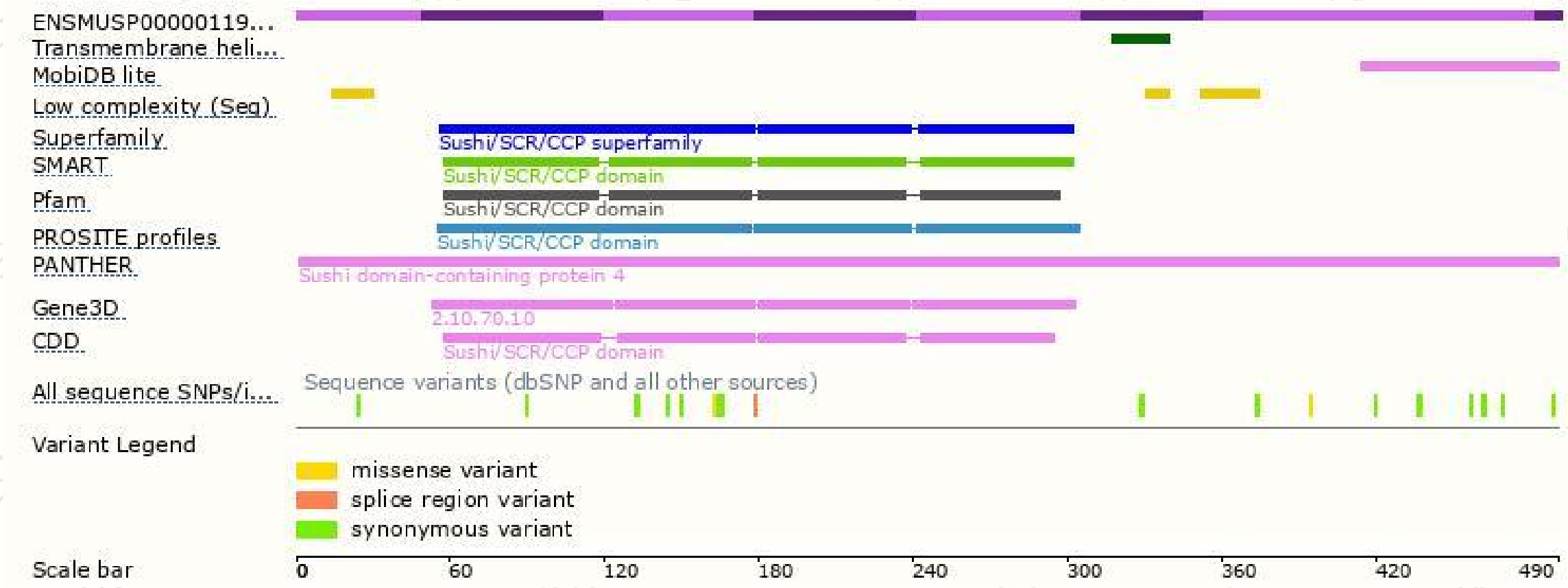
The strategy is based on the design of *Susd4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

