

Scml4 Cas9-KO Strategy

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Project Overview

Project Name

Scml4

Project type

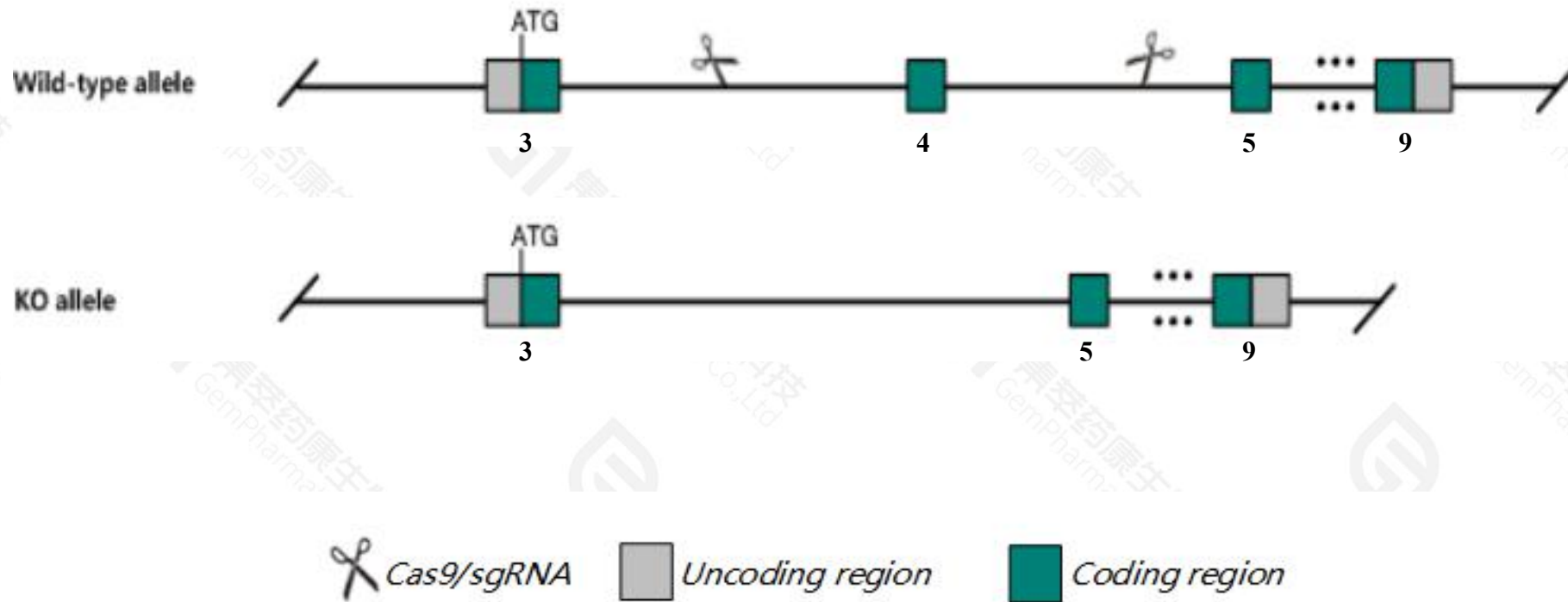
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Scml4* gene. The schematic diagram is as follows:



- The *Scml4* gene has 9 transcripts. According to the structure of *Scml4* gene, exon4 of *Scml4*-201(ENSMUST00000063063.14) transcript is recommended as the knockout region. The region contains 130bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Scml4* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Scml4* gene is located on the Chr10. 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.

Scml4 Scm polycomb group protein like 4 [Mus musculus (house mouse)]

Gene ID: 268297, updated on 17-Dec-2020

Summary



Official Symbol Scml4 provided by [MGI](#)

Official Full Name Scm polycomb group protein like 4 provided by [MGI](#)

Primary source [MGI:MGI:2446140](#)

See related [Ensembl:ENSMUSG00000044770](#)

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 9330161D17, mFLJ00197

Expression Broad expression in spleen adult (RPKM 3.2), thymus adult (RPKM 2.9) and 22 other tissues [See more](#)

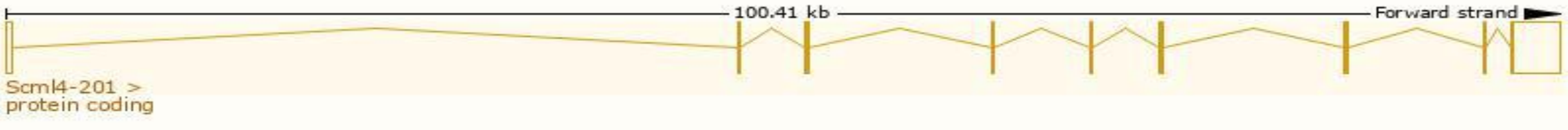
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

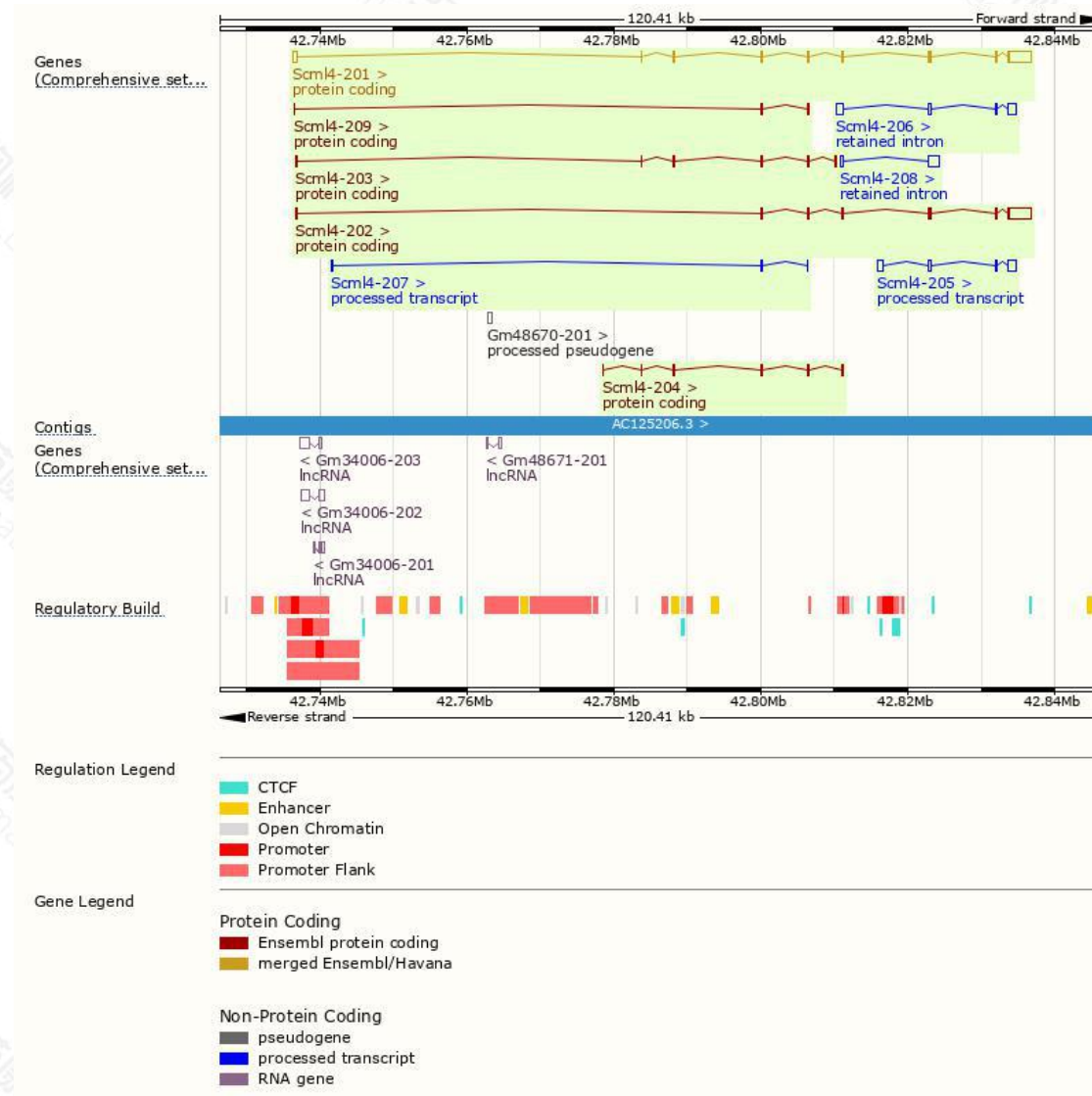
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Scml4-201	ENSMUST00000063063.14	4885	408aa	Protein coding	CCDS23816		TSL:1 , GENCODE basic , APPRIS P1 ,
Scml4-202	ENSMUST00000105494.8	4166	350aa	Protein coding	-		TSL:1 , GENCODE basic ,
Scml4-203	ENSMUST00000105495.8	1033	177aa	Protein coding	-		TSL:1 , GENCODE basic ,
Scml4-204	ENSMUST00000125576.2	887	224aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Scml4-209	ENSMUST00000157071.8	365	94aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Scml4-205	ENSMUST00000127675.2	2214	No protein	Processed transcript	-		TSL:1 ,
Scml4-207	ENSMUST00000136841.2	349	No protein	Processed transcript	-		TSL:5 ,
Scml4-206	ENSMUST00000130511.8	2381	No protein	Retained intron	-		TSL:1 ,
Scml4-208	ENSMUST00000153091.2	1563	No protein	Retained intron	-		TSL:1 ,

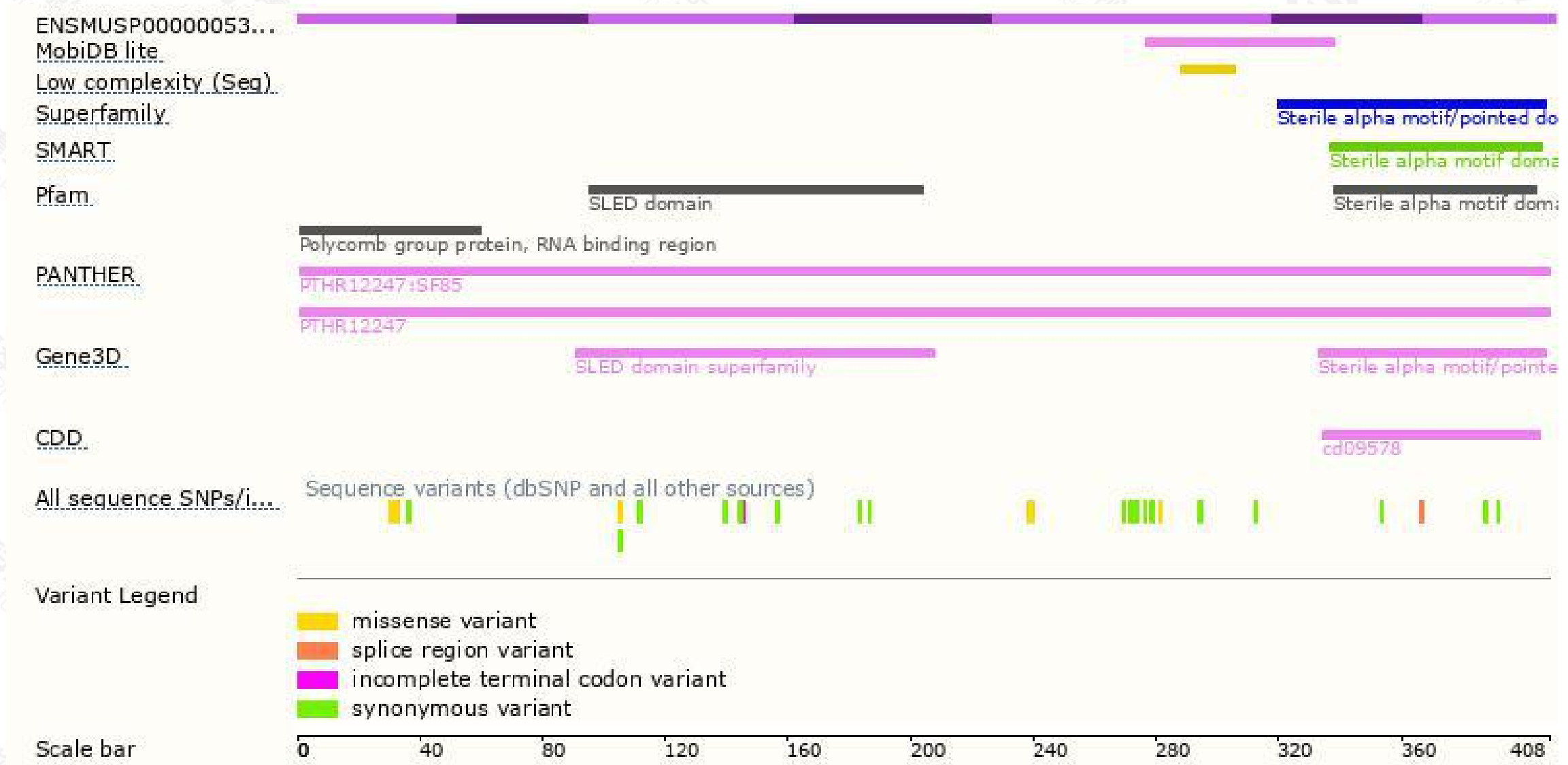
The strategy is based on the design of *Scml4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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