

Psmb4 Cas9-KO Strategy

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Project Overview

Project Name

Psmb4

Project type

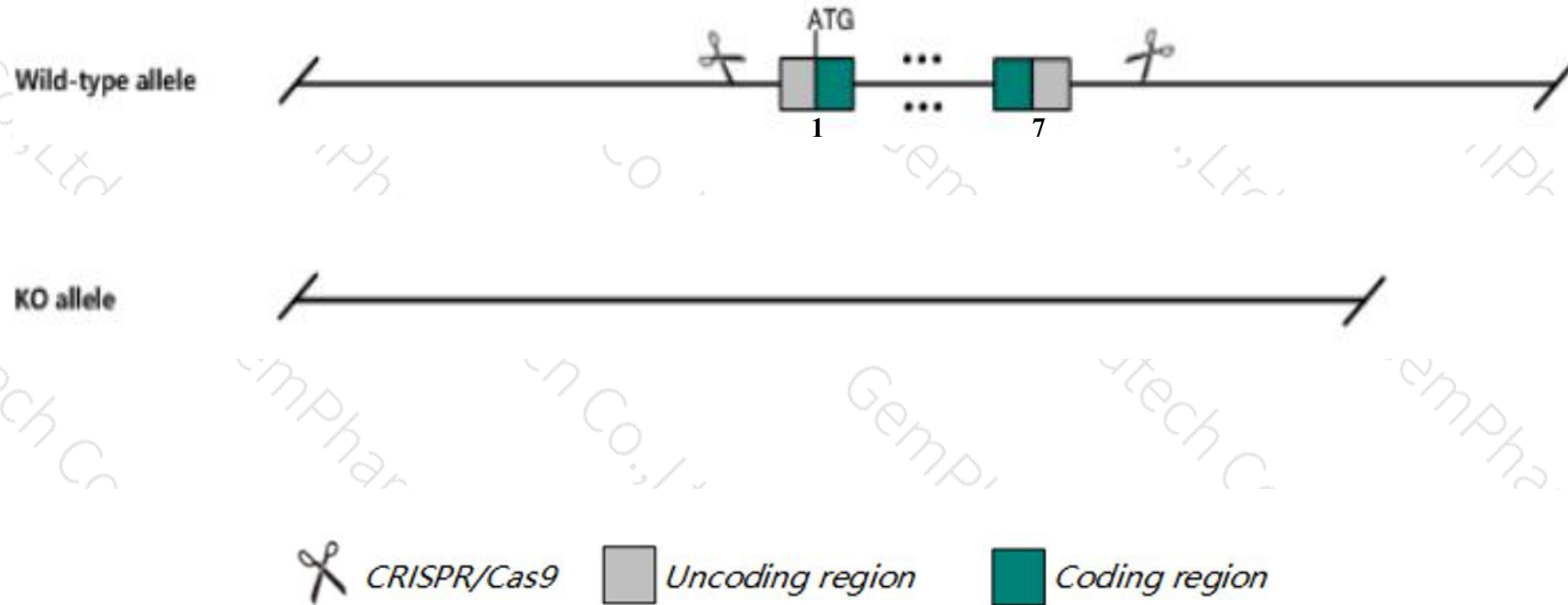
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Psmb4* gene. The schematic diagram is as follows:



- The *Psmb4* gene has 5 transcripts. According to the structure of *Psmb4* gene, exon1-exon7 of *Psmb4-201* (ENSMUST00000005923.6) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Psmb4* gene. The brief process is as follows: CRISPR/Cas9 system

- The knockout region is near to the C-terminal of *Pogz* gene, this strategy may influence the regulatory function of the C-terminal of *Pogz* gene.
- The *Psmb4* gene is located on the Chr3. 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)

Psmb4 proteasome (prosome, macropain) subunit, beta type 4 [*Mus musculus* (house mouse)]

Gene ID: 19172, updated on 27-Feb-2020

Summary

- Official Symbol** Psmb4 provided by [MGI](#)
- Official Full Name** proteasome (prosome, macropain) subunit, beta type 4 provided by [MGI](#)
- Primary source** [MGI:MGI:1098257](#)
- See related** [Ensembl:ENSMUSG00000005779](#)
- 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** Pros-27
- Expression** Ubiquitous expression in placenta adult (RPKM 131.5), large intestine adult (RPKM 127.3) and 28 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 3 F2.1; 3 40.74 cM See Psmb4 in [Genome Data Viewer](#)

Exon count: 7

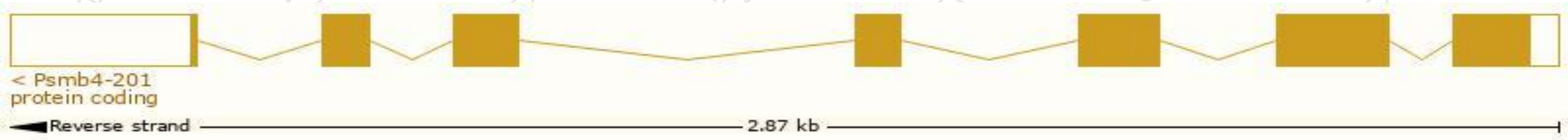
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (94884324..94886958, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (94688246..94690880, complement)

Transcript information (Ensembl)

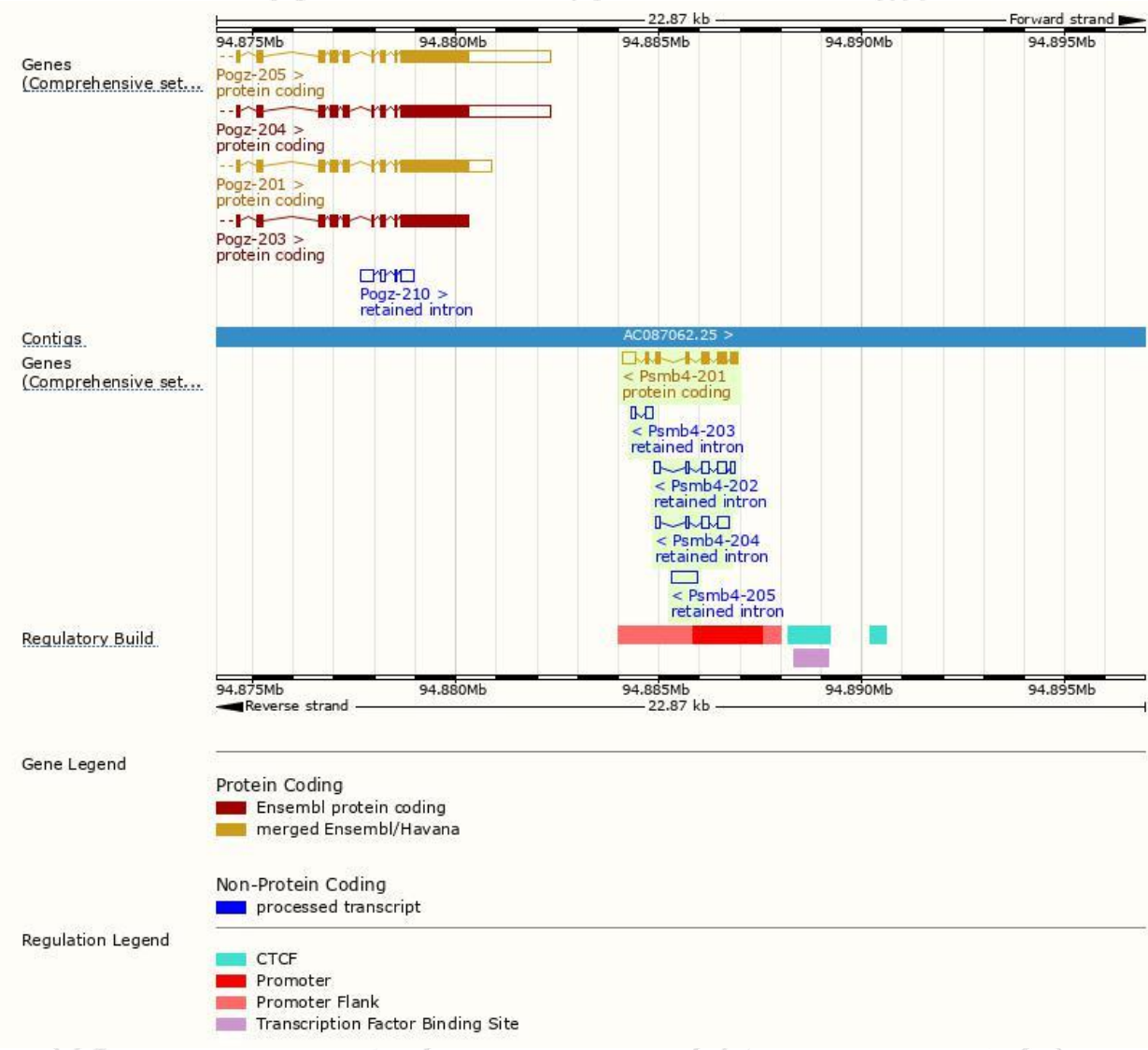
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Psemb4-201	ENSMUST00000005923.6	1183	264aa	Protein coding	CCDS17597	P99026	TSL:1 GENCODE basic APPRIS P1
Psemb4-202	ENSMUST00000133412.7	666	No protein	Retained intron	-	-	TSL:2
Psemb4-204	ENSMUST00000136143.1	651	No protein	Retained intron	-	-	TSL:1
Psemb4-205	ENSMUST00000200513.1	649	No protein	Retained intron	-	-	TSL:NA
Psemb4-203	ENSMUST00000134133.1	292	No protein	Retained intron	-	-	TSL:2

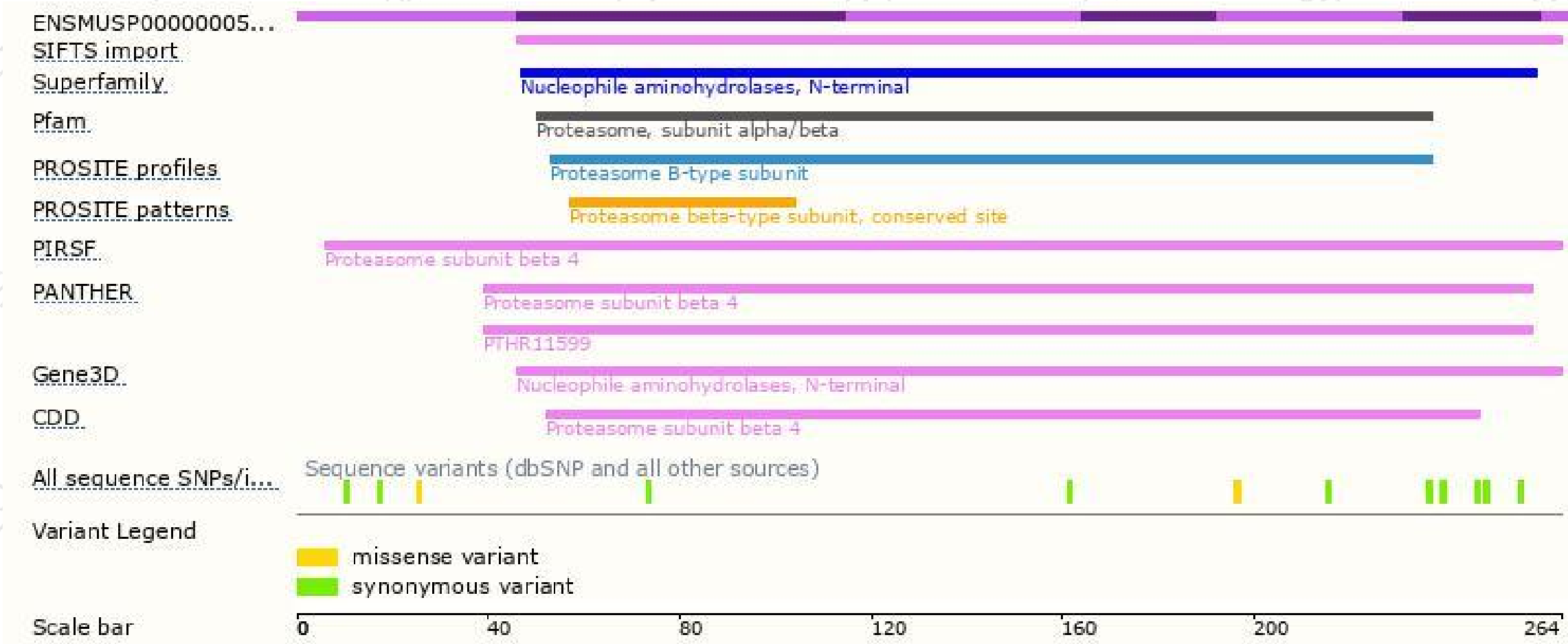
The strategy is based on the design of *Psemb4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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