

Psm**d10 Cas9-CKO Strategy**

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Project Overview

Project Name

Psmd10

Project type

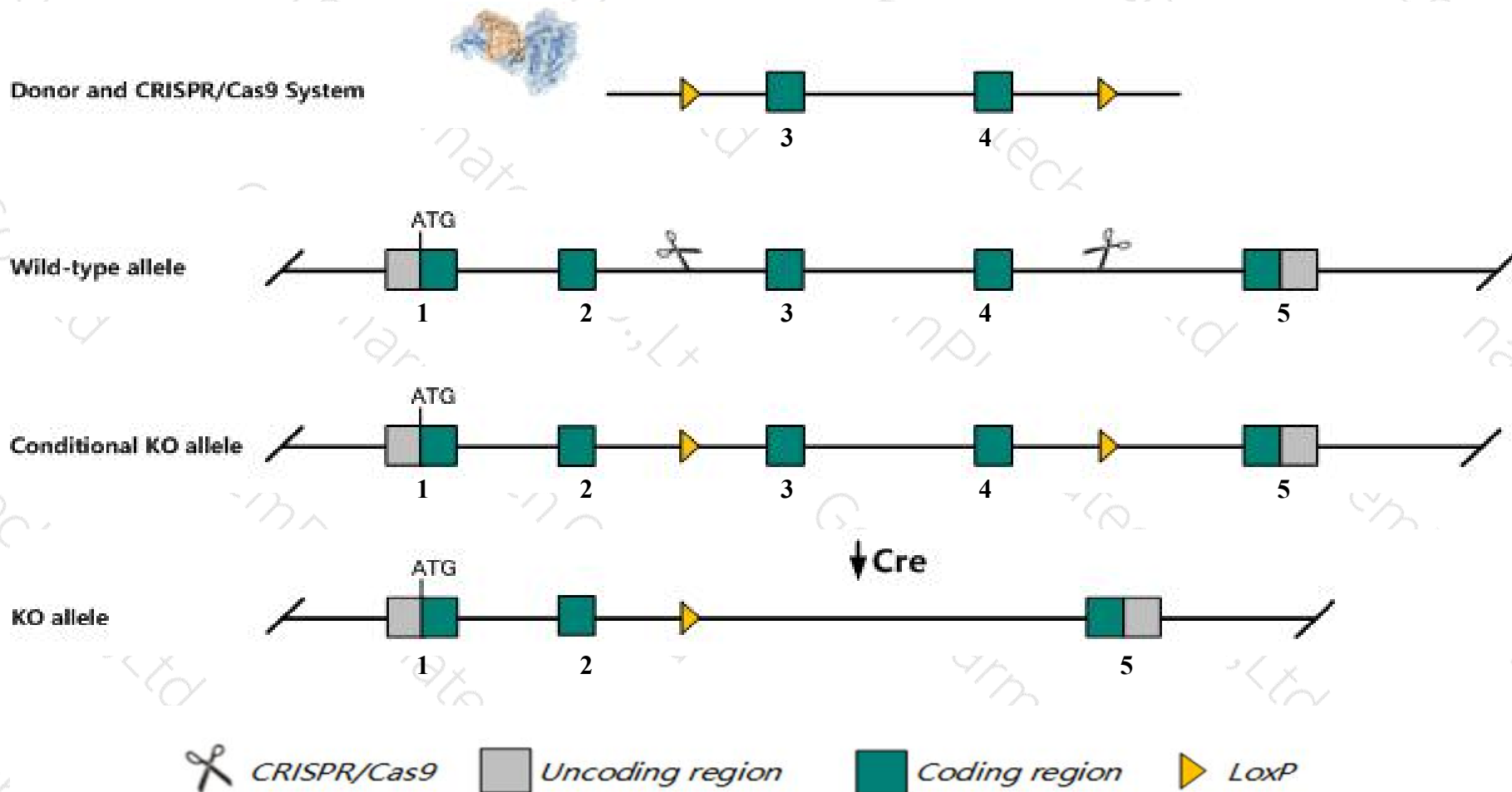
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Psmd10* gene. The schematic diagram is as follows:



- The *Psmc10* gene has 2 transcripts. According to the structure of *Psmc10* gene, exon3-exon4 of *Psmc10-201* (ENSMUST00000033805.14) transcript is recommended as the knockout region. The region contains 314bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Psmc10* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Psmc10* gene is located on the ChrX. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Psmd10 proteasome (prosome, macropain) 26S subunit, non-ATPase, 10 [Mus musculus (house mouse)]

Gene ID: 53380, updated on 31-Jan-2019

Summary



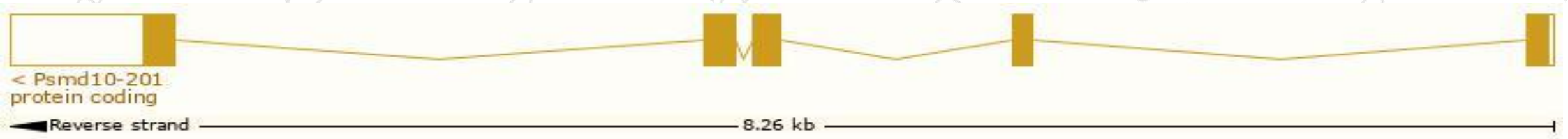
Official Symbol	Psmd10 provided by MGI
Official Full Name	proteasome (prosome, macropain) 26S subunit, non-ATPase, 10 provided by MGI
Primary source	MGI:MGI:1858898
See related	Ensembl:ENSMUSG000000031429
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AW554874
Expression	Ubiquitous expression in liver E14 (RPKM 11.2), placenta adult (RPKM 10.3) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

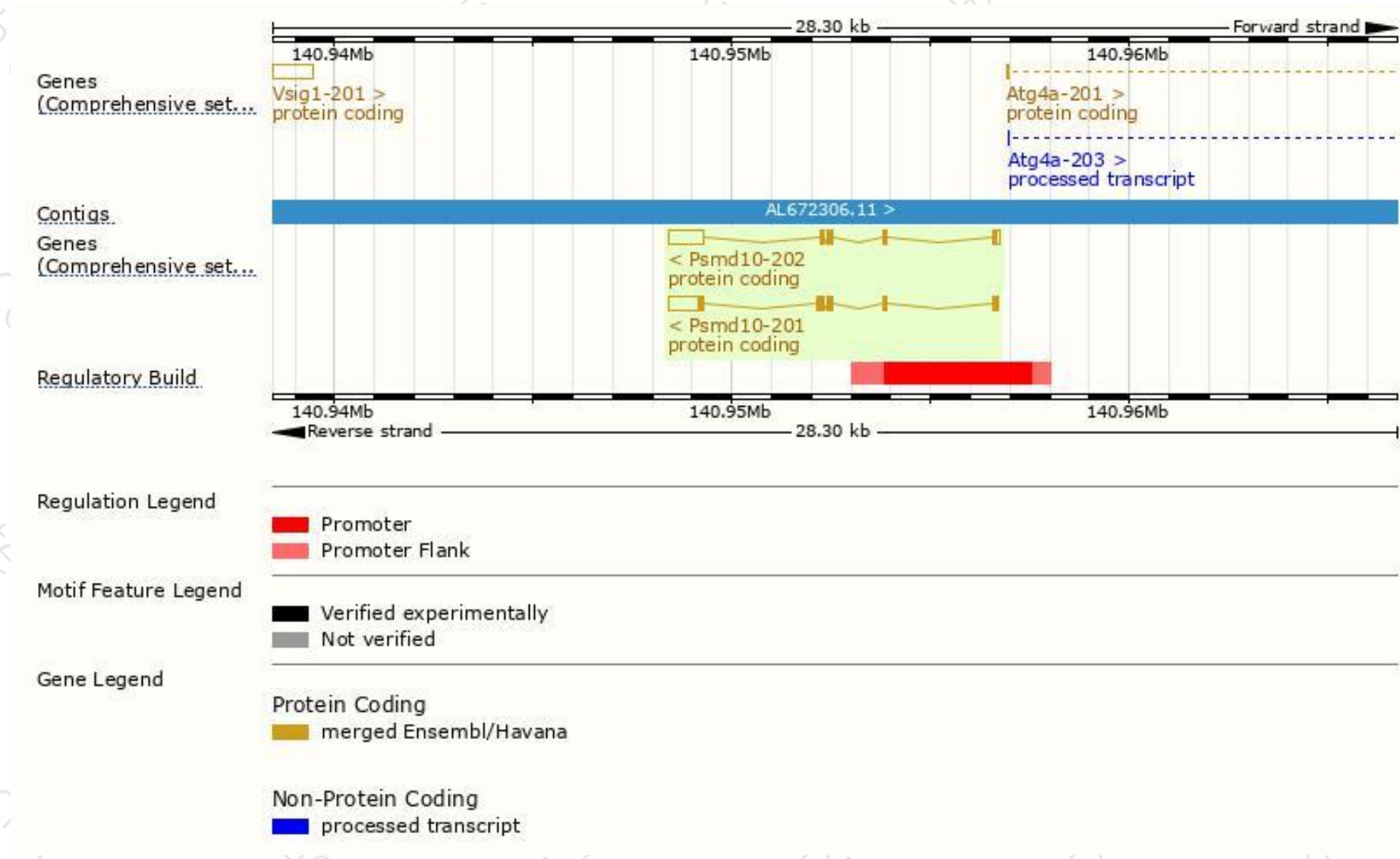
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Psm10-201	ENSMUST00000033805.14	1430	231aa	Protein coding	CCDS30444	Q9Z2X2	TSL:1 GENCODE basic APPRIS P3
Psm10-202	ENSMUST00000112978.1	1390	151aa	Protein coding	CCDS53207	A2AG83	TSL:2 GENCODE basic APPRIS ALT1

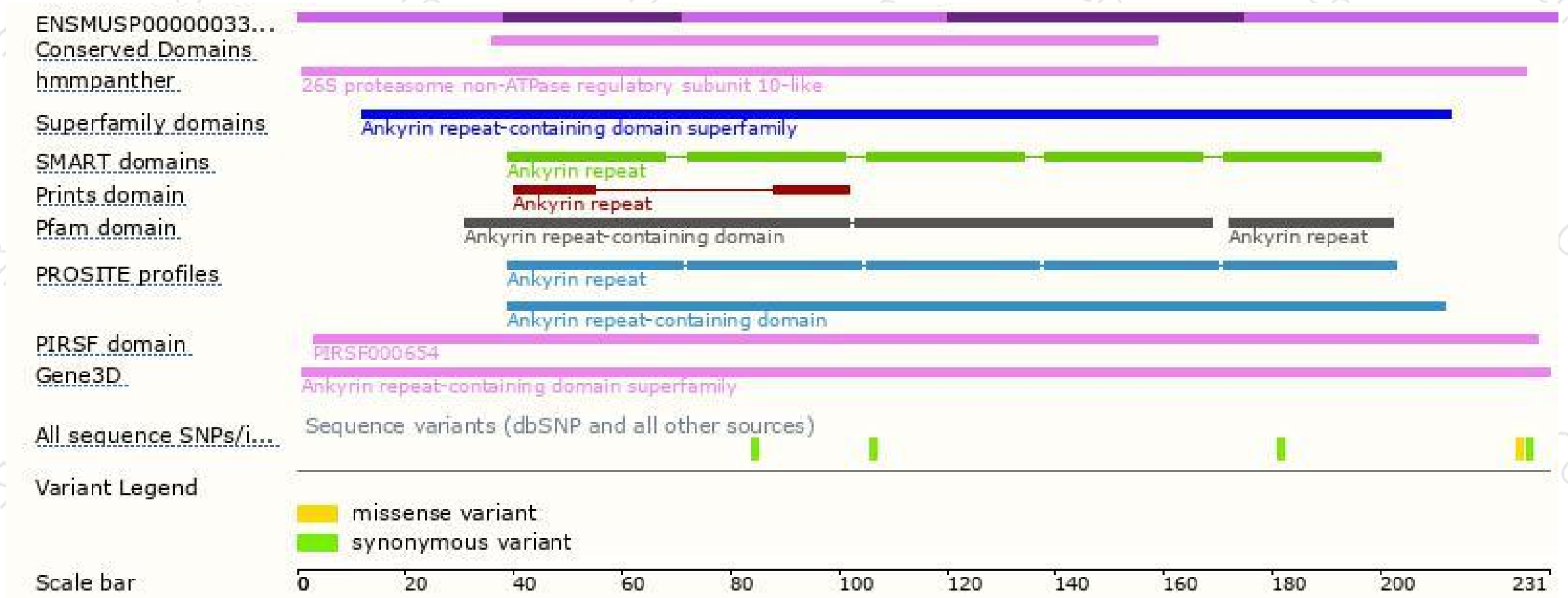
The strategy is based on the design of *Psm10-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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