

Tpsg1 **Cas9-KO Strategy**

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Project Overview

Project Name

Tpsg1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Tpsg1* gene has 5 transcripts. According to the structure of *Tpsg1* gene, exon2 of *Tpsg1-201* (ENSMUST00000024999.14) transcript is recommended as the knockout region. The region contains 172bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tpsg1* gene. The brief process is as follows: CRISPR/Cas9 system

- Transcript *Tpsg1*-202 、 *Tpsg1*-203、 *Tpsg1*-205 may not be affected.
- The *Tpsg1* gene is located on the Chr17. 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)

Tpsg1 tryptase gamma 1 [Mus musculus (house mouse)]

Gene ID: 26945, updated on 31-Jan-2019

Summary



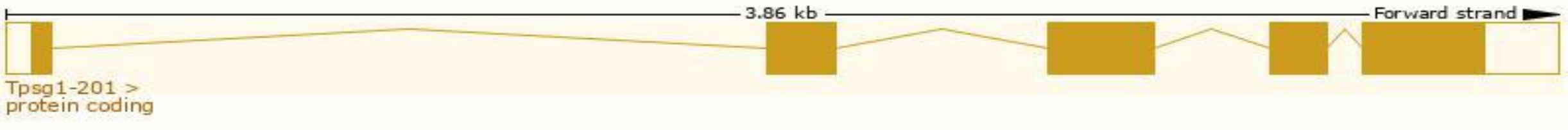
Official Symbol	Tpsg1 provided by MGI
Official Full Name	tryptase gamma 1 provided by MGI
Primary source	MGI:MGI:1349391
See related	Ensembl:ENSMUSG00000033200
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Prss31, Tmt
Expression	Biased expression in colon adult (RPKM 51.6), large intestine adult (RPKM 22.2) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

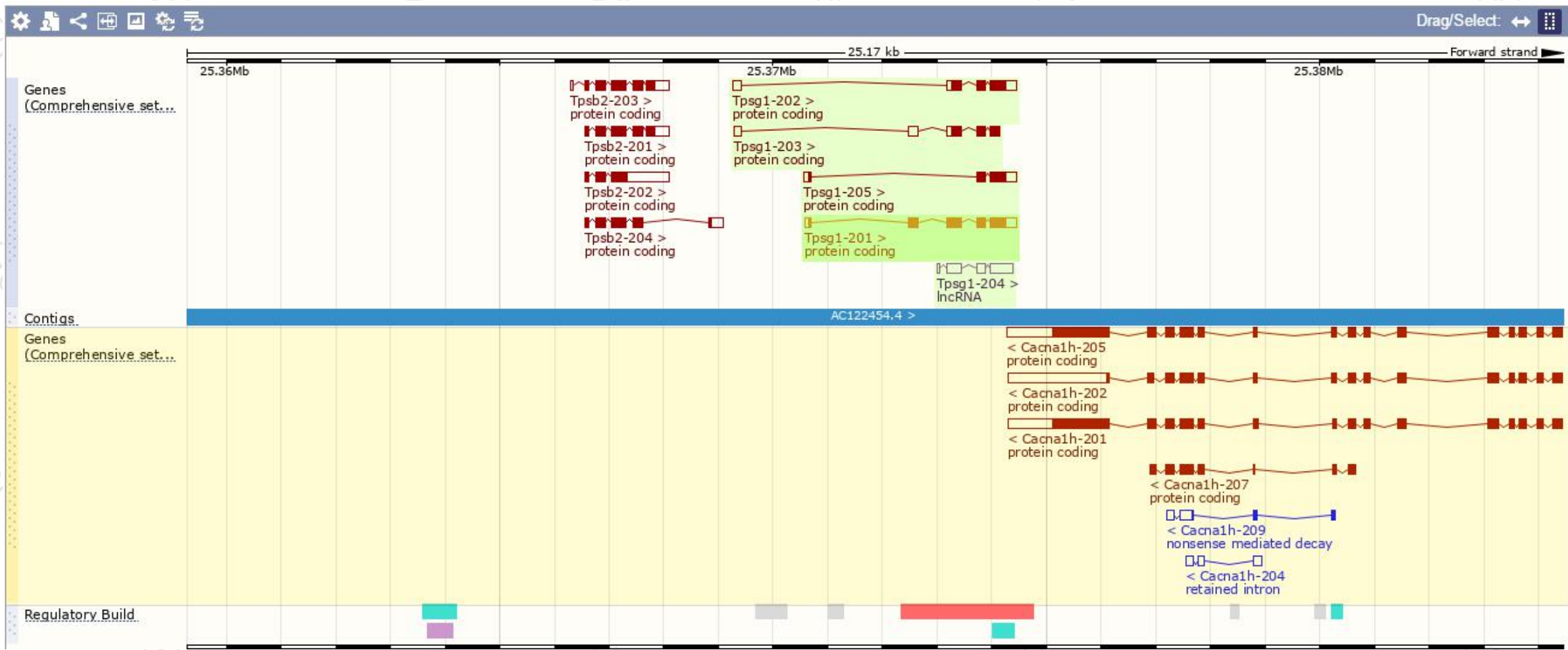
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tpsg1-201	ENSMUST00000024999.14	1186	311aa	Protein coding	CCDS28518	E9QLD4	TSL:1 GENCODE basic APPRIS P1
Tpsg1-202	ENSMUST00000160377.7	1040	208aa	Protein coding	-	G3XA07	TSL:1 GENCODE basic
Tpsg1-203	ENSMUST00000160485.7	905	172aa	Protein coding	-	E0CXD8	CDS 3' incomplete TSL:3
Tpsg1-205	ENSMUST00000162021.7	777	165aa	Protein coding	-	E9Q7E3	TSL:5 GENCODE basic
Tpsg1-204	ENSMUST00000160920.1	867	No protein	lncRNA	-	-	TSL:3

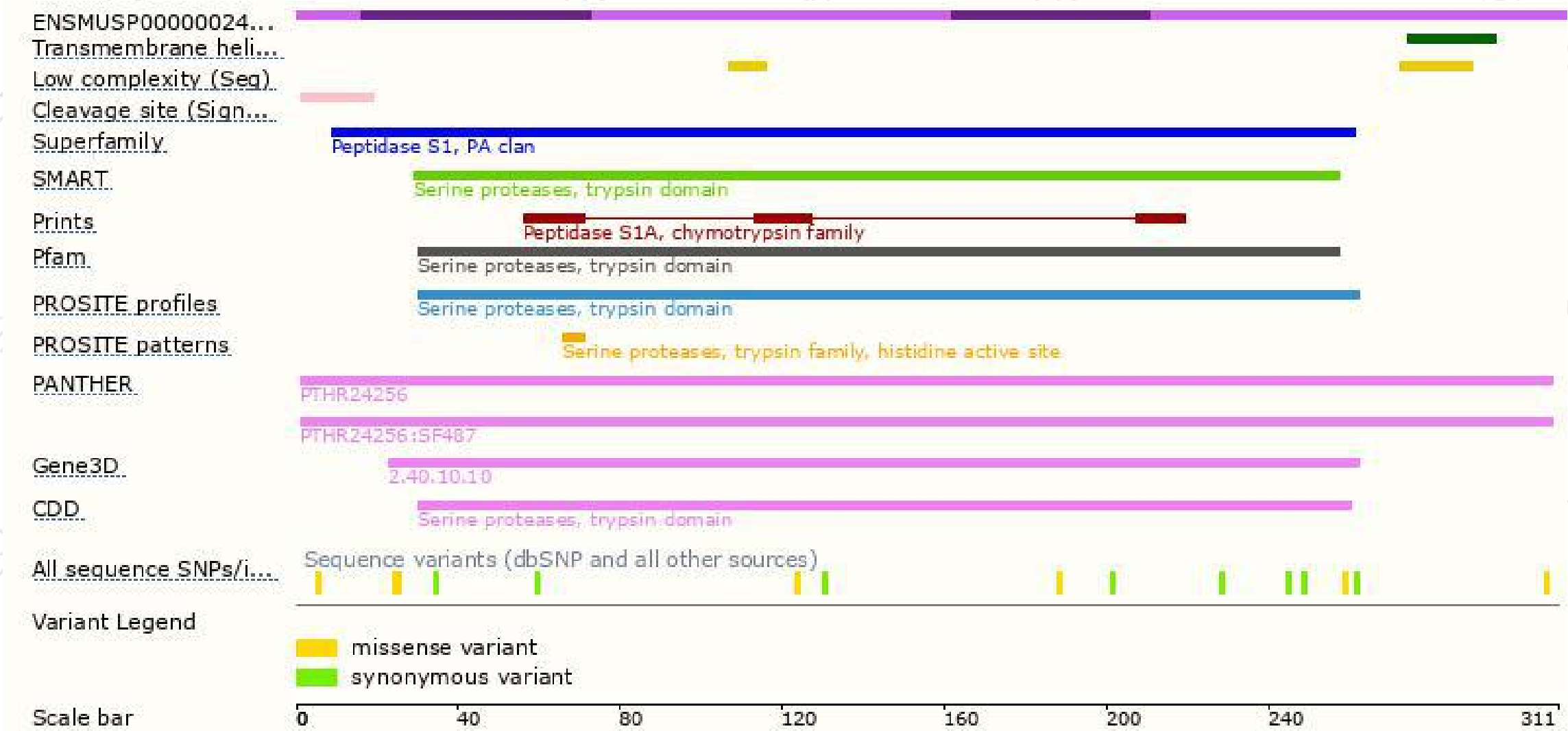
The strategy is based on the design of *Tpsg1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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