

Fam45a Cas9-KO Strategy

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Project Overview

Project Name

Fam45a

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fam45a* gene. The schematic diagram is as follows:



- The *Fam45a* gene has 7 transcripts. According to the structure of *Fam45a* gene, exon4-exon6 of *Fam45a-201* (ENSMUST00000025957.8) transcript is recommended as the knockout region. The region contains 362bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fam45a* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Fam45a* gene is located on the Chr19. 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)

Fam45a family with sequence similarity 45, member A [*Mus musculus* (house mouse)]

Gene ID: 67894, updated on 28-Jan-2020

Summary

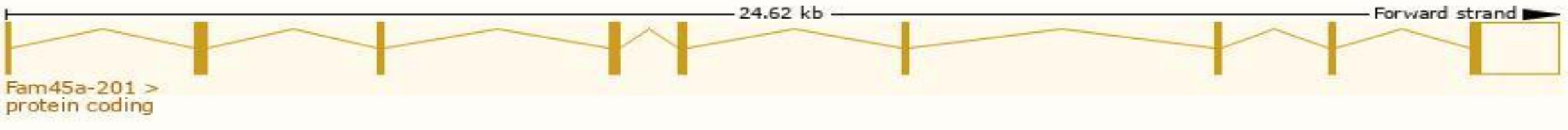
Official Symbol	Fam45a provided by MGI
Official Full Name	family with sequence similarity 45, member A provided by MGI
Primary source	MGI:MGI:1915144
See related	Ensembl:ENSMUSG00000024993
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Dennd10; 1810055E12Rik
Expression	Ubiquitous expression in testis adult (RPKM 13.5), placenta adult (RPKM 12.7) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

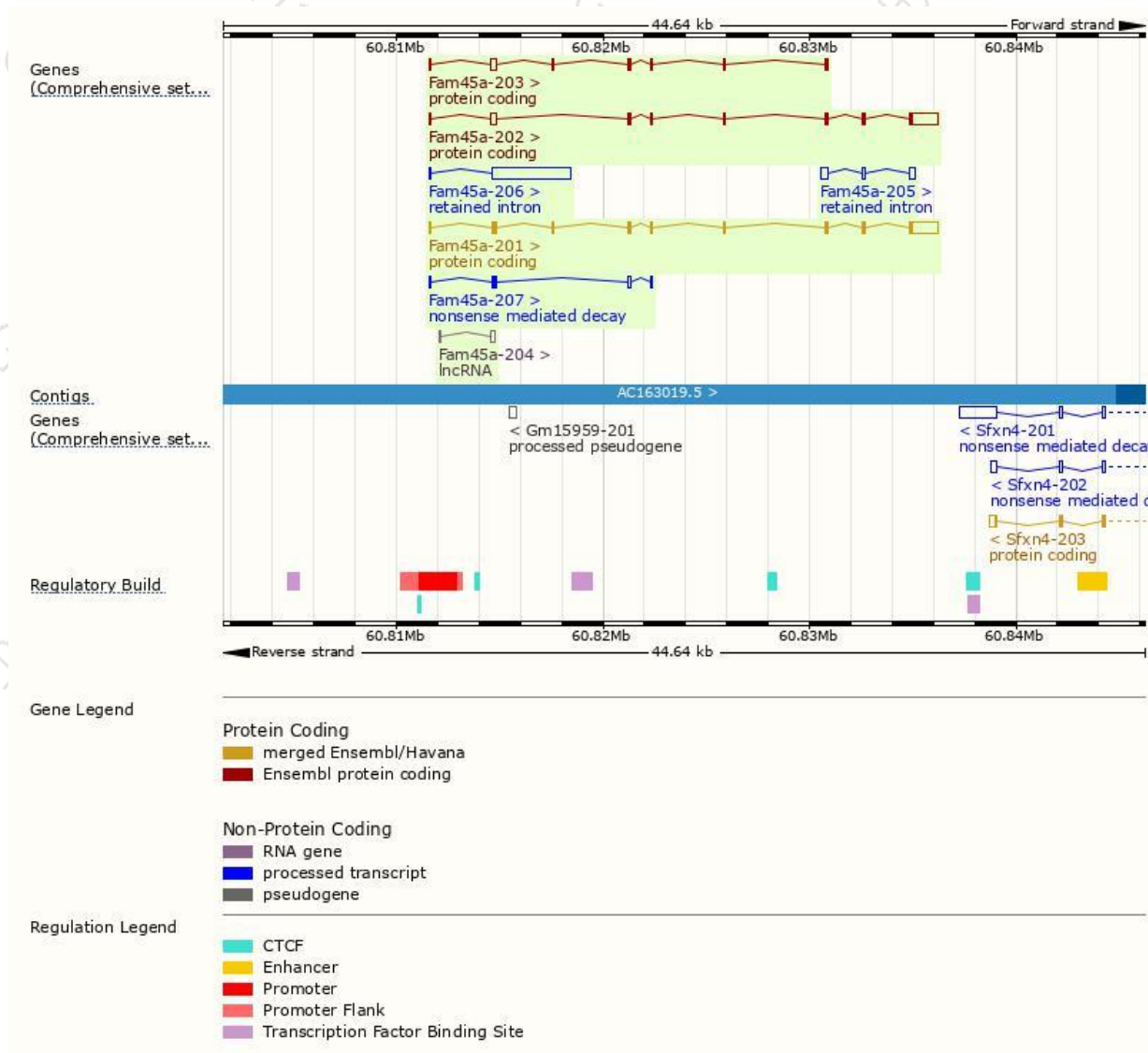
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fam45a-201	ENSMUST00000025957.8	2307	357aa	Protein coding	CCDS29942	Q9D8N2	TSL:1 GENCODE basic APPRIS P1
Fam45a-202	ENSMUST00000119633.7	2267	236aa	Protein coding	CCDS84460	Q3TH34	TSL:1 GENCODE basic
Fam45a-203	ENSMUST00000128357.7	826	136aa	Protein coding	-	D3YUG1	CDS 3' incomplete TSL:3
Fam45a-207	ENSMUST00000148577.7	521	93aa	Nonsense mediated decay	-	D6RIQ6	TSL:3
Fam45a-206	ENSMUST00000147049.1	3906	No protein	Retained intron	-	-	TSL:2
Fam45a-205	ENSMUST00000142375.1	726	No protein	Retained intron	-	-	TSL:2
Fam45a-204	ENSMUST00000136146.1	273	No protein	lncRNA	-	-	TSL:3

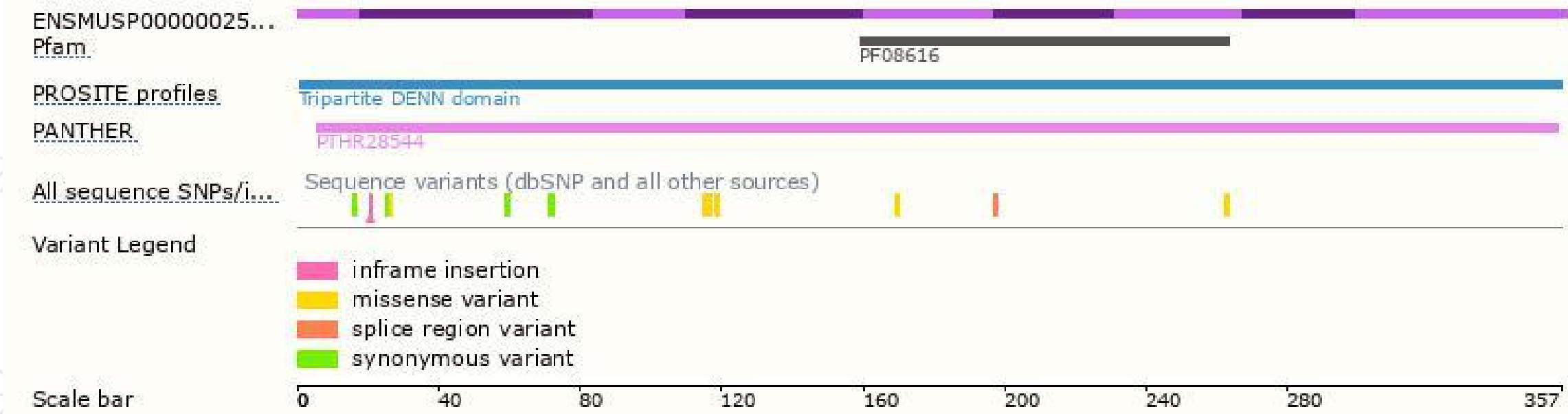
The strategy is based on the design of *Fam45a-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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