

Usp27x Cas9-KO Strategy

Designer:

Baocheng Zhuang

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Project Overview

Project Name

Usp27x

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Usp27x* gene. The schematic diagram is as follows:



- The *Usp27x* gene has 3 transcripts. According to the structure of *Usp27x* gene, exon1-exon2 of *Usp27x-203* (ENSMUST00000191497.1) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Usp27x* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Usp27x* 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.
- *Gm14379* is located upstream of *Usp27x* gene, and the *Gm14379* may be disruption together.
- 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)

Usp27x ubiquitin specific peptidase 27, X chromosome [*Mus musculus* (house mouse)]

Gene ID: 54651, updated on 12-Aug-2019

Summary

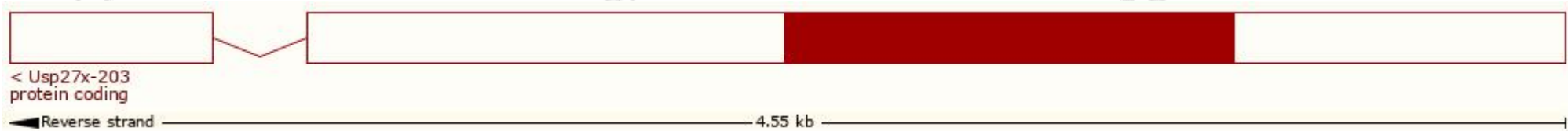
Official Symbol	Usp27x provided by MGI
Official Full Name	ubiquitin specific peptidase 27, X chromosome provided by MGI
Primary source	MGI:MGI:1859645
See related	Ensembl:ENSMUSG00000046269
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Sfc11; Usp27
Orthologs	human all

Transcript information (Ensembl)

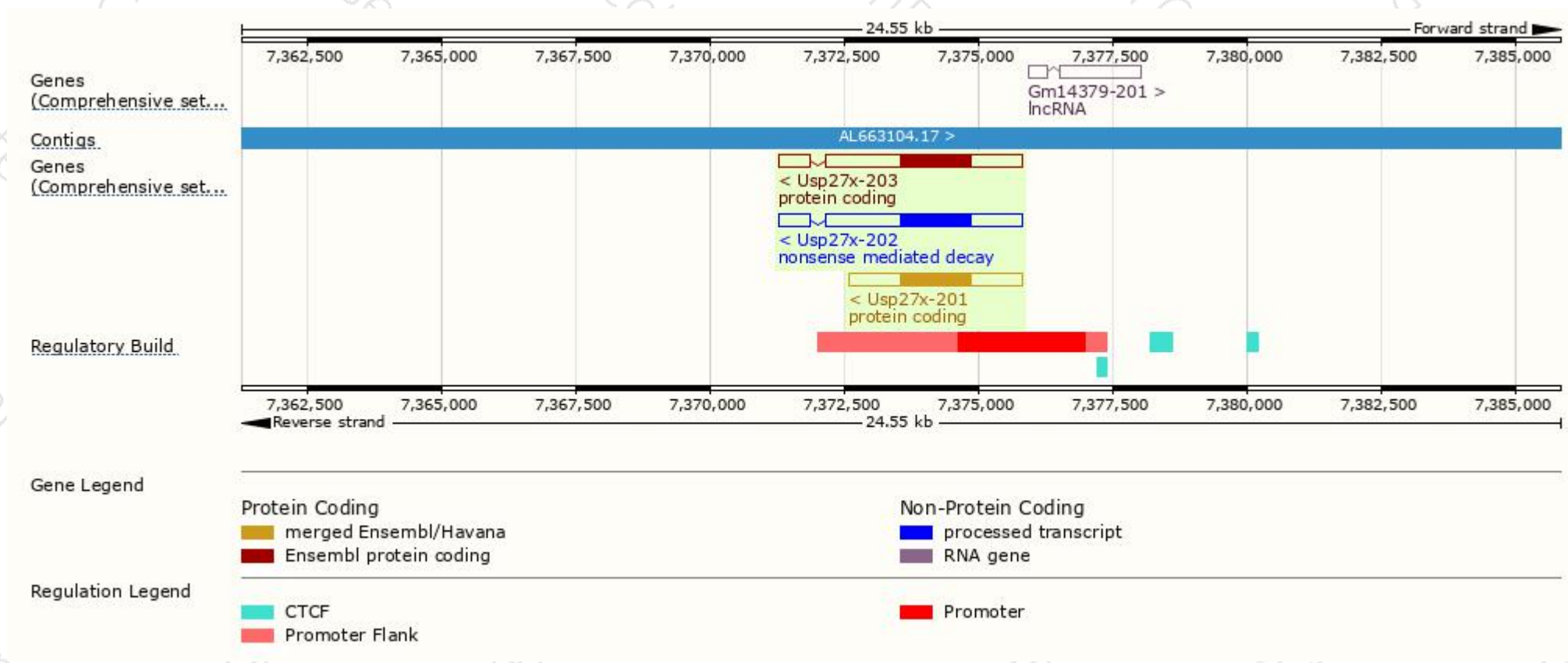
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Usp27x-203	ENSMUST00000191497.1	4273	438aa	Protein coding	CCDS52983	Q8CEG8	TSL:2 GENCODE basic APPRIS P1
Usp27x-201	ENSMUST00000115744.1	3240	438aa	Protein coding	CCDS52983	Q8CEG8	TSL:NA GENCODE basic APPRIS P1
Usp27x-202	ENSMUST00000178293.7	4273	438aa	Nonsense mediated decay	CCDS52983	Q8CEG8	TSL:2

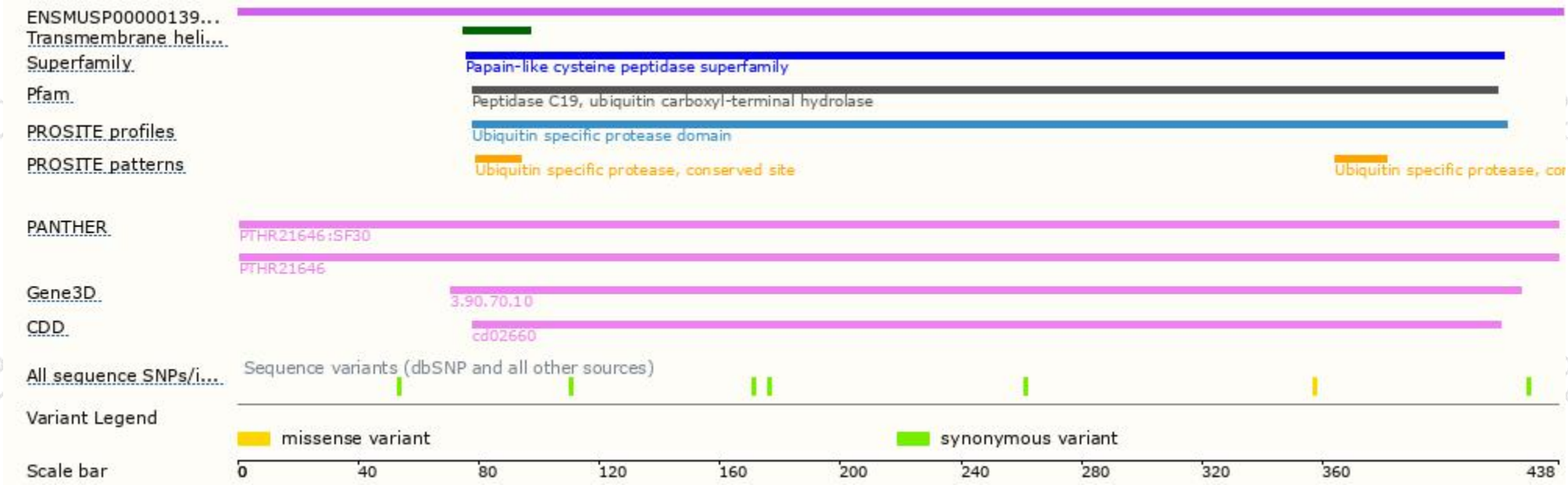
The strategy is based on the design of *Usp27x-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

