

Serpini2 Cas9-KO Strategy

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Project Overview

Project Name

Serpini2

Project type

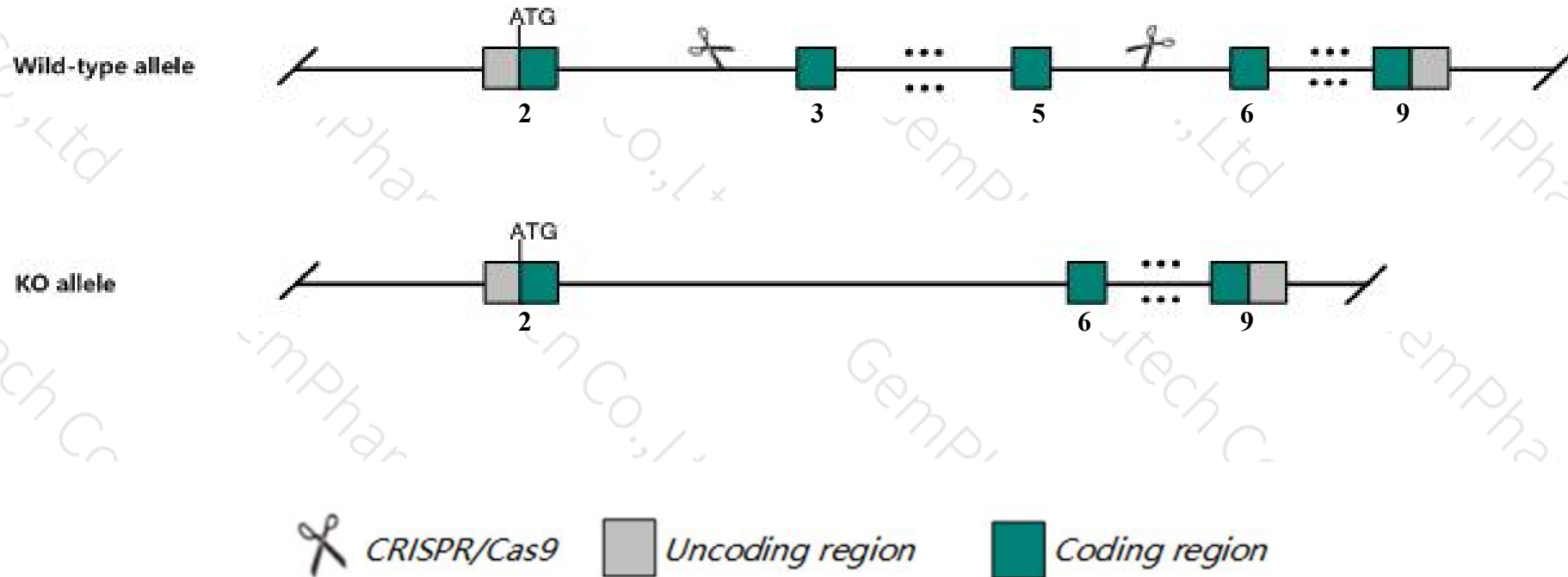
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Serpini2* gene. The schematic diagram is as follows:



- The *Serpini2* gene has 1 transcript. According to the structure of *Serpini2* gene, exon3-exon5 of *Serpini2-201* (ENSMUST00000039047.4) transcript is recommended as the knockout region. The region contains 619bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Serpini2* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a transgene insertion/deletion encompassing this gene display pancreatic insufficiency characterized by progressive apoptosis of pancreatic acinar cells, postnatal growth retardation, immunological anomalies, and premature death.
- The *Serpini2* 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)

Serpini2 serine (or cysteine) peptidase inhibitor, clade I, member 2 [Mus musculus (house mouse)]

Gene ID: 67931, updated on 31-Jan-2019

Summary



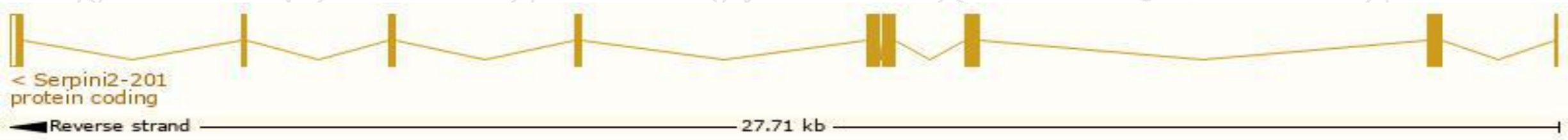
Official Symbol	Serpini2 provided by MGI
Official Full Name	serine (or cysteine) peptidase inhibitor, clade I, member 2 provided by MGI
Primary source	MGI:MGI:1915181
See related	Ensembl:ENSMUSG000000034139
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Spi14
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

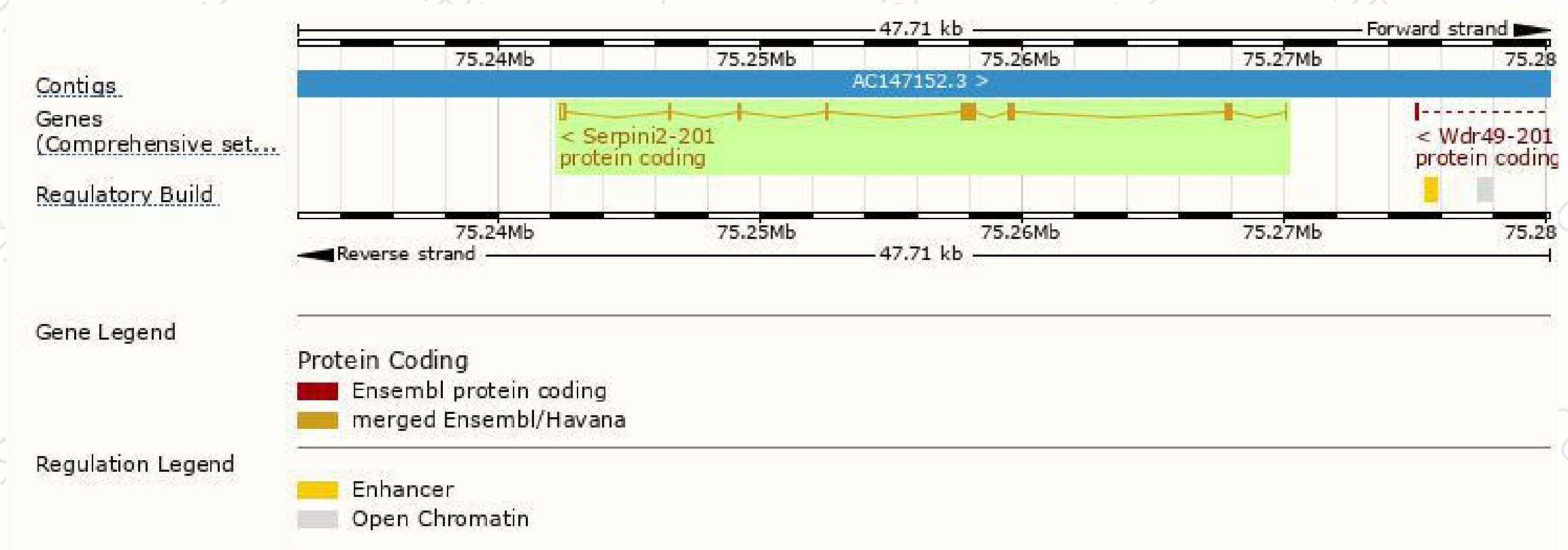
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Serpini2-201	ENSMUST00000039047.4	1411	405aa	Protein coding	CCDS17413	Q4G0D3 Q9JK88	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Serpini2-201* transcript, The transcription is shown below



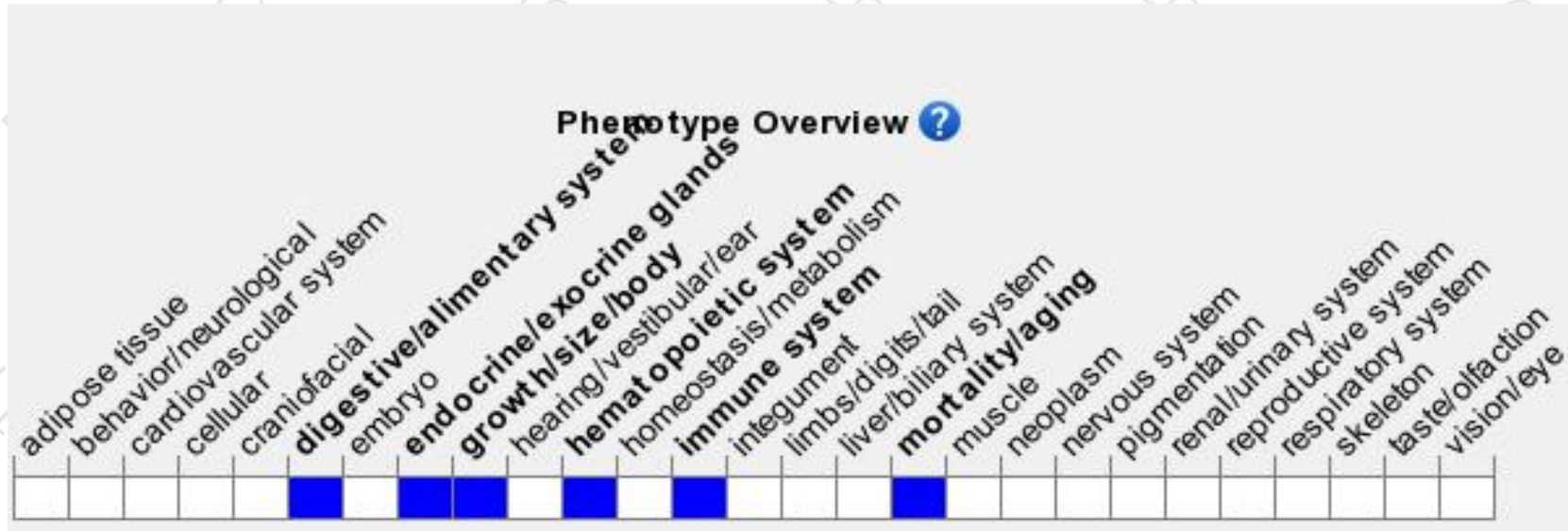
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for a transgene insertion/deletion encompassing this gene display pancreatic insufficiency characterized by progressive apoptosis of pancreatic acinar cells, postnatal growth retardation, immunological anomalies, and premature death.

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

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