

Srpx Cas9-KO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

2020-3-4

Project Overview

Project Name

Srpx

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Srpx* gene has 4 transcripts. According to the structure of *Srpx* gene, exon3-exon5 of *Srpx-201* (ENSMUST00000044789.9) transcript is recommended as the knockout region. The region contains 496bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Srpx* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice either heterozygous or homozygous for a knock-out allele display increased sensitivity to malignant tumor formation at 7-12 months of age. In addition, homozygotes exhibit atypical lymphocyte morphology and splenomegaly.
- The *Srpx* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Srpx sushi-repeat-containing protein [Mus musculus (house mouse)]

Gene ID: 51795, updated on 31-Jan-2019

Summary



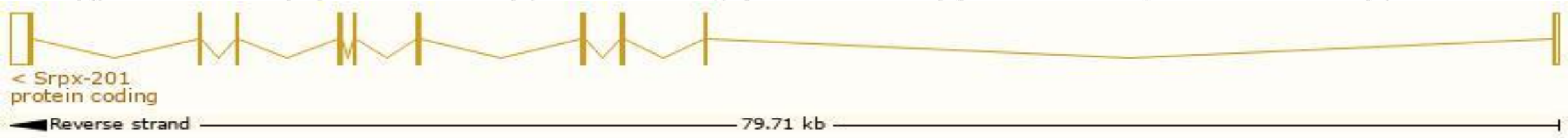
Official Symbol	Srpx provided by MGI
Official Full Name	sushi-repeat-containing protein provided by MGI
Primary source	MGI:MGI:1858306
See related	Ensembl:ENSMUSG00000090084
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	DRS-1, DRS-2, drs, drs-1, drs-2
Expression	Broad expression in mammary gland adult (RPKM 23.2), bladder adult (RPKM 15.6) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

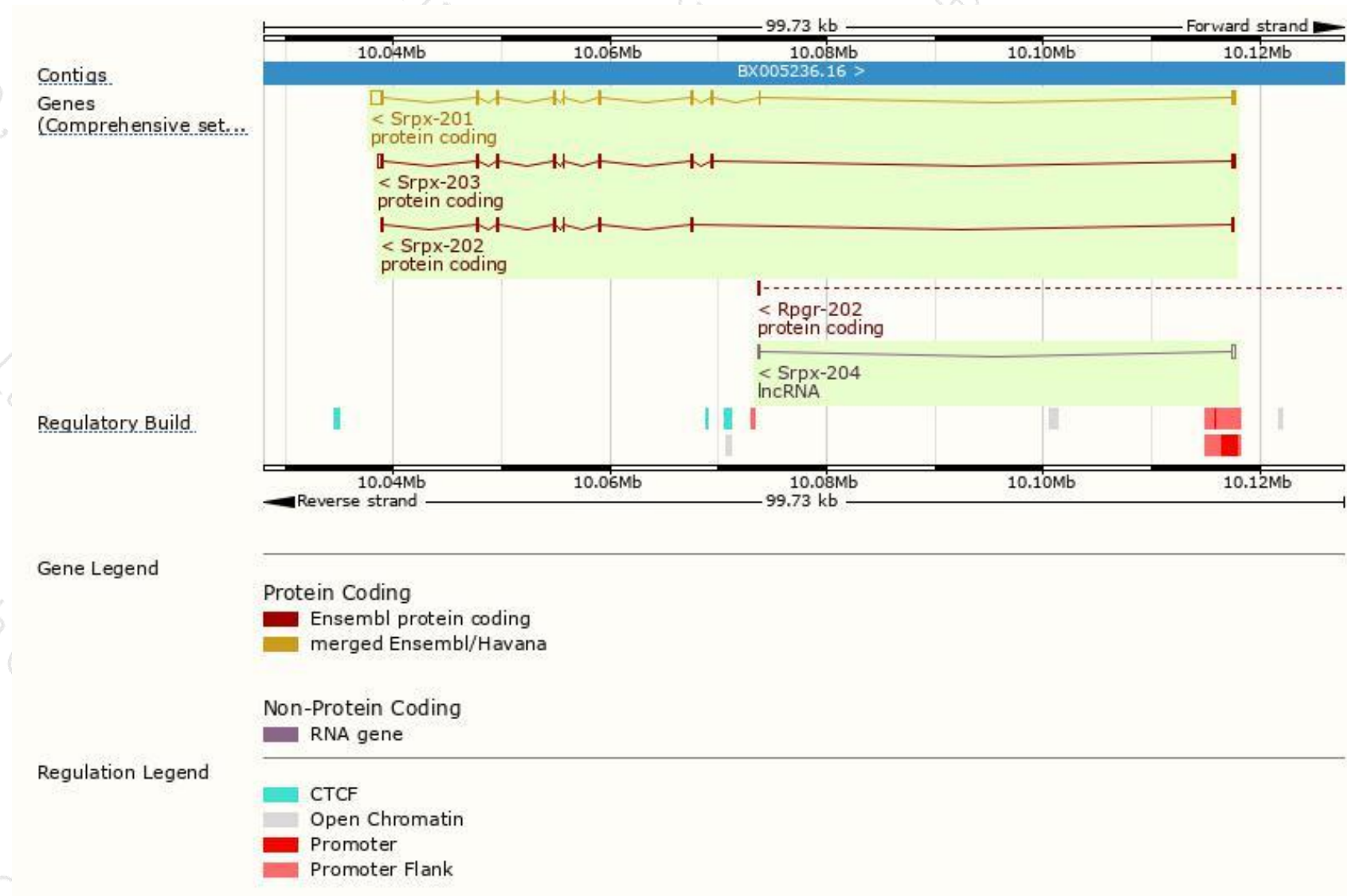
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Srpx-201	ENSMUST00000044789.9	2477	464aa	Protein coding	CCDS30013	Q9R0M3	TSL:1 GENCODE basic APPRIS P2
Srpx-203	ENSMUST00000115544.8	1865	444aa	Protein coding	-	A2BE45	TSL:1 GENCODE basic APPRIS ALT2
Srpx-202	ENSMUST00000115543.2	1218	380aa	Protein coding	-	Q9R0M3	TSL:1 GENCODE basic
Srpx-204	ENSMUST00000147334.1	441	No protein	lncRNA	-	-	TSL:1

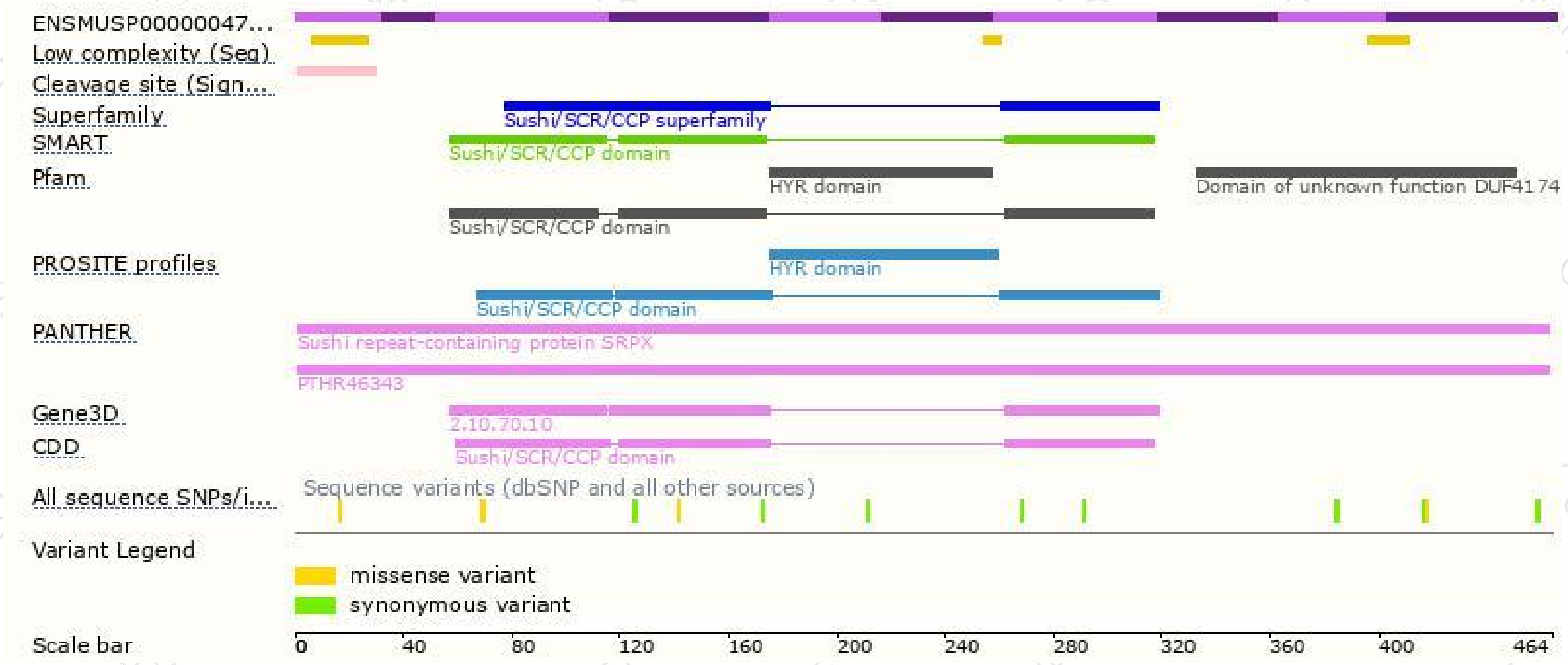
The strategy is based on the design of *Srpx-201* transcript,The transcription is shown below



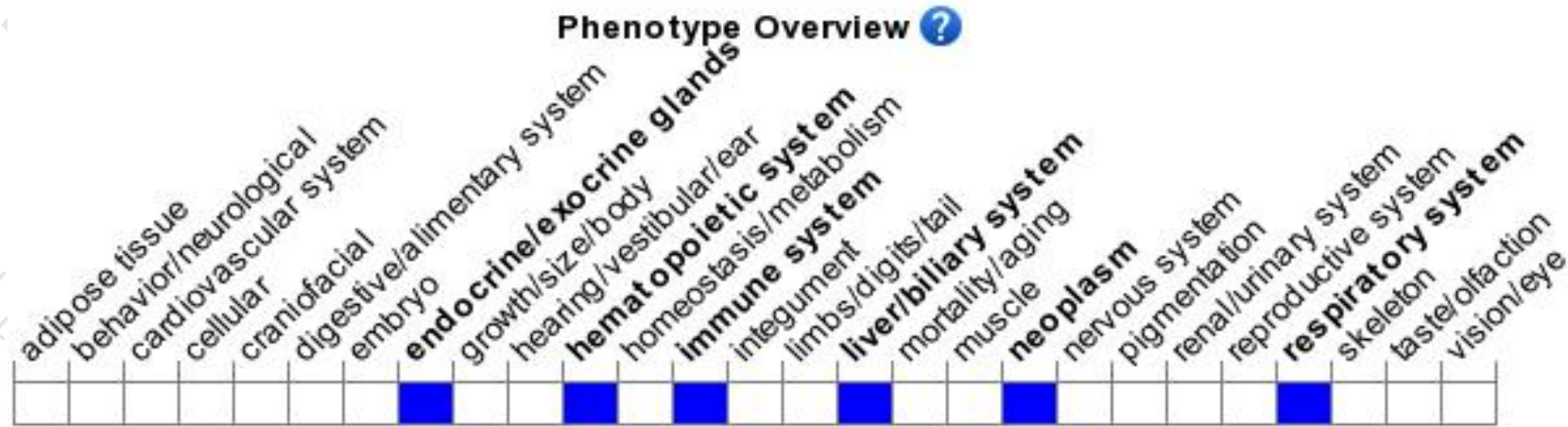
Genomic location distribution



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 either heterozygous or homozygous for a knock-out allele display increased sensitivity to malignant tumor formation at 7-12 months of age. In addition, homozygotes exhibit atypical lymphocyte morphology and splenomegaly.

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

Tel: 400-9660890

