

Srsf6 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Srsf6

Project type

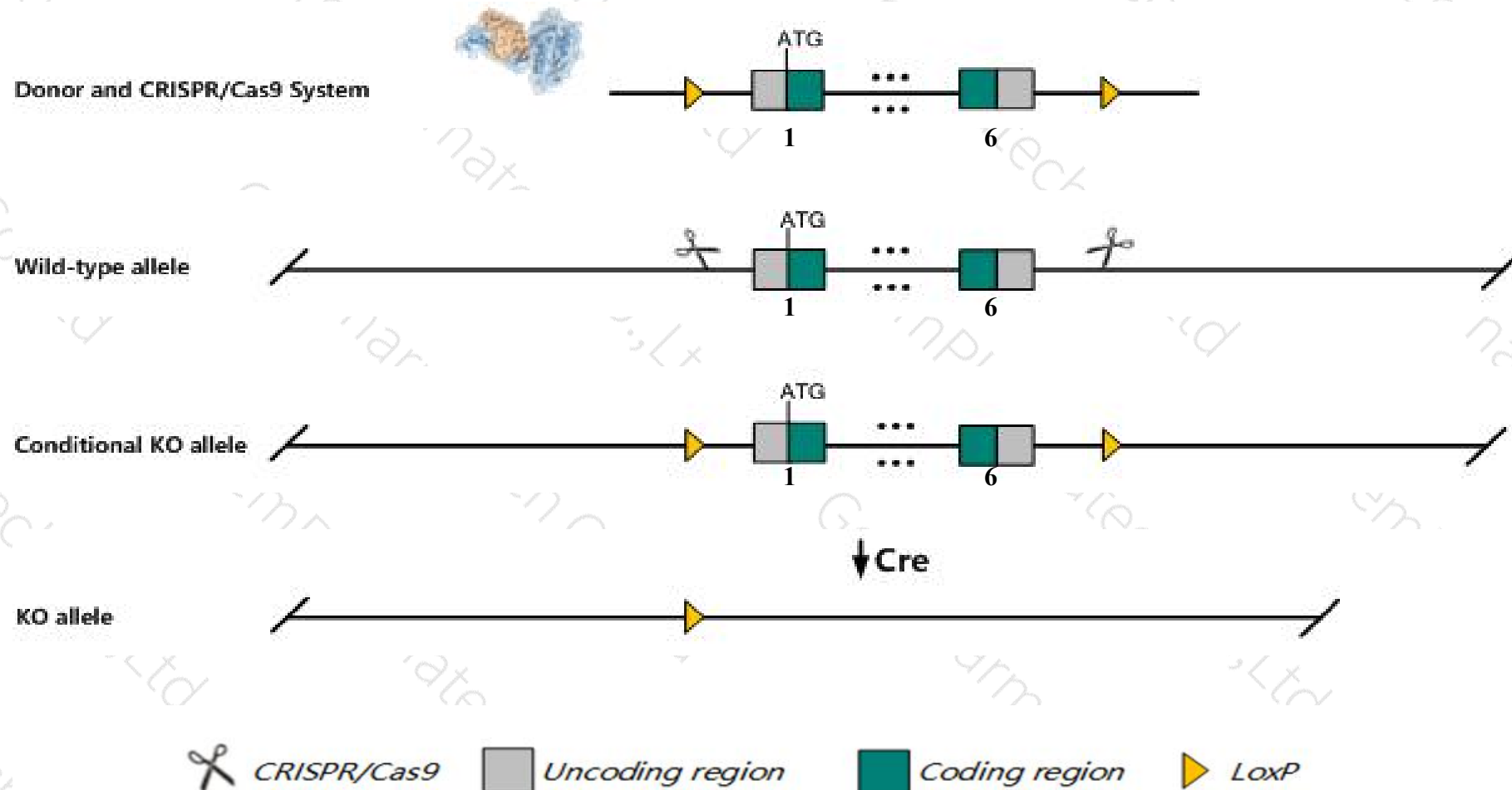
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Srsf6* gene. The schematic diagram is as follows:



- The *Srsf6* gene has 4 transcripts. According to the structure of *Srsf6* gene, exon1-exon6 of *Srsf6*-203 (ENSMUST00000130411.6) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Srsf6* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Srsf6* gene is located on the Chr2. 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)

Srsf6 serine/arginine-rich splicing factor 6 [Mus musculus (house mouse)]

Gene ID: 67996, updated on 31-Jan-2019

Summary



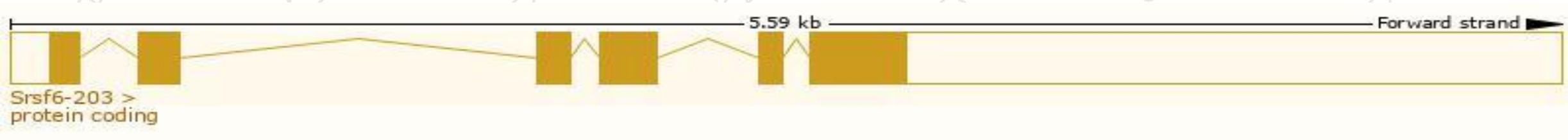
Official Symbol	Srsf6 provided by MGI
Official Full Name	serine/arginine-rich splicing factor 6 provided by MGI
Primary source	MGI:MGI:1915246
See related	Ensembl:ENSMUSG00000016921
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1210001E11Rik, AI314910, AW146126, Sfrs6
Summary	The protein encoded by this gene is a member of the serine/arginine (SR)-rich family of pre-mRNA splicing factors, which constitute part of the spliceosome. Each of these factors contains an RNA recognition motif (RRM) for binding RNA and an RS domain for binding other proteins. The RS domain is rich in serine and arginine residues and facilitates interaction between different SR splicing factors. In addition to being critical for mRNA splicing, the SR proteins have also been shown to be involved in mRNA export from the nucleus and in translation. [provided by RefSeq, Sep 2010]
Expression	Ubiquitous expression in adrenal adult (RPKM 167.2), CNS E11.5 (RPKM 118.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

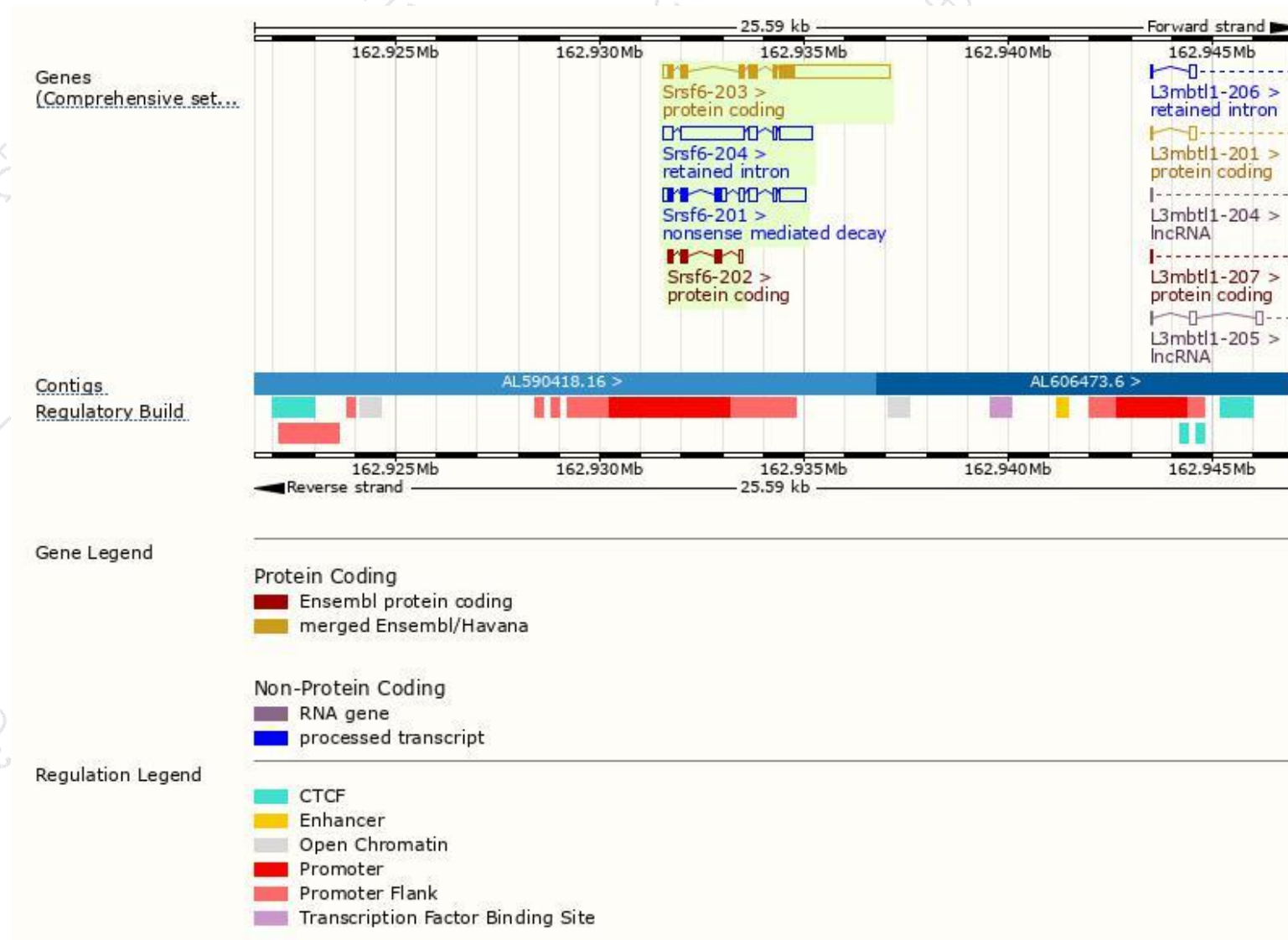
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Srsf6-203	ENSMUST00000130411.6	3527	339aa	Protein coding	CCDS17002	Q3TWW8	TSL:1 GENCODE basic APPRIS P1
Srsf6-202	ENSMUST00000126163.2	515	135aa	Protein coding	-	A0A0A6YXX6	TSL:5 GENCODE basic
Srsf6-201	ENSMUST00000017065.14	1666	135aa	Nonsense mediated decay	-	A0A0A6YXX6	TSL:5
Srsf6-204	ENSMUST00000193611.5	2897	No protein	Retained intron	-	-	TSL:1

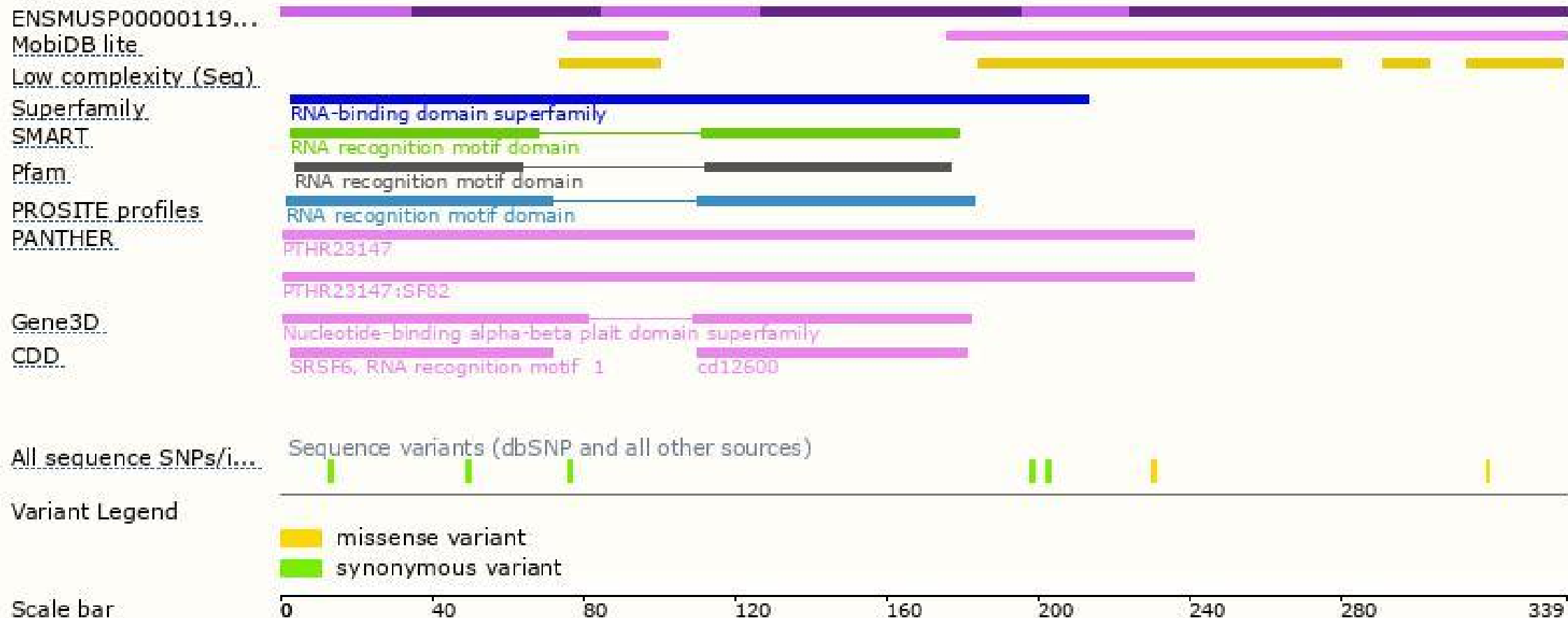
The strategy is based on the design of *Srsf6-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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