

Rps3a1 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Rps3a1

Project type

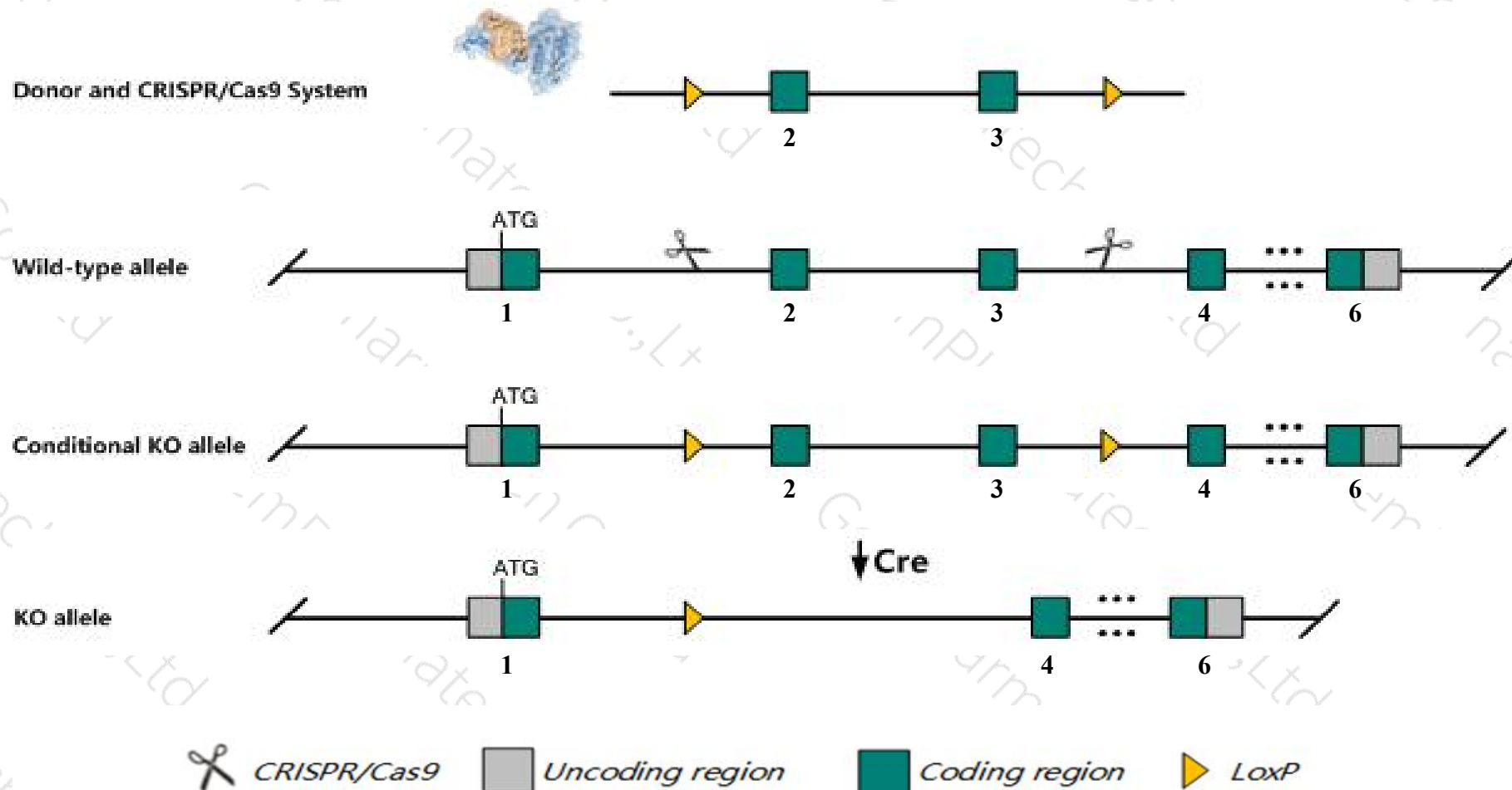
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rps3a1* gene. The schematic diagram is as follows:



- The *Rps3a1* gene has 1 transcript. According to the structure of *Rps3a1* gene, exon2-exon3 of *Rps3a1-201* (ENSMUST00000029722.6) transcript is recommended as the knockout region. The region contains 292bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rps3a1* 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.

- This strategy may affect the 5-terminal regulation of *Gm37933*, *Snord73a*, and *Rnu73b* genes.
- The *Rps3a1* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Rps3a1 ribosomal protein S3A1 [Mus musculus (house mouse)]

Gene ID: 20091, updated on 31-Jan-2019

Summary



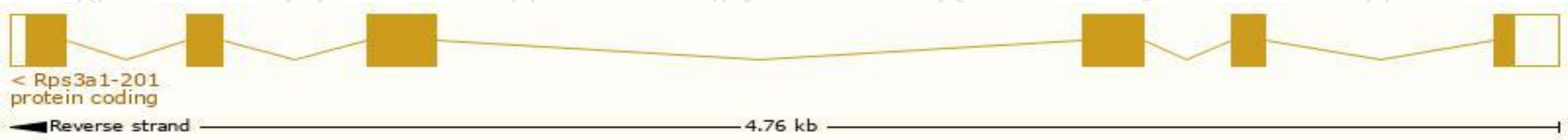
Official Symbol	Rps3a1 provided by MGI
Official Full Name	ribosomal protein S3A1 provided by MGI
Primary source	MGI:MGI:1202063
See related	Ensembl:ENSMUSG00000028081
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Rps3a
Expression	Broad expression in CNS E11.5 (RPKM 670.7), bladder adult (RPKM 656.5) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

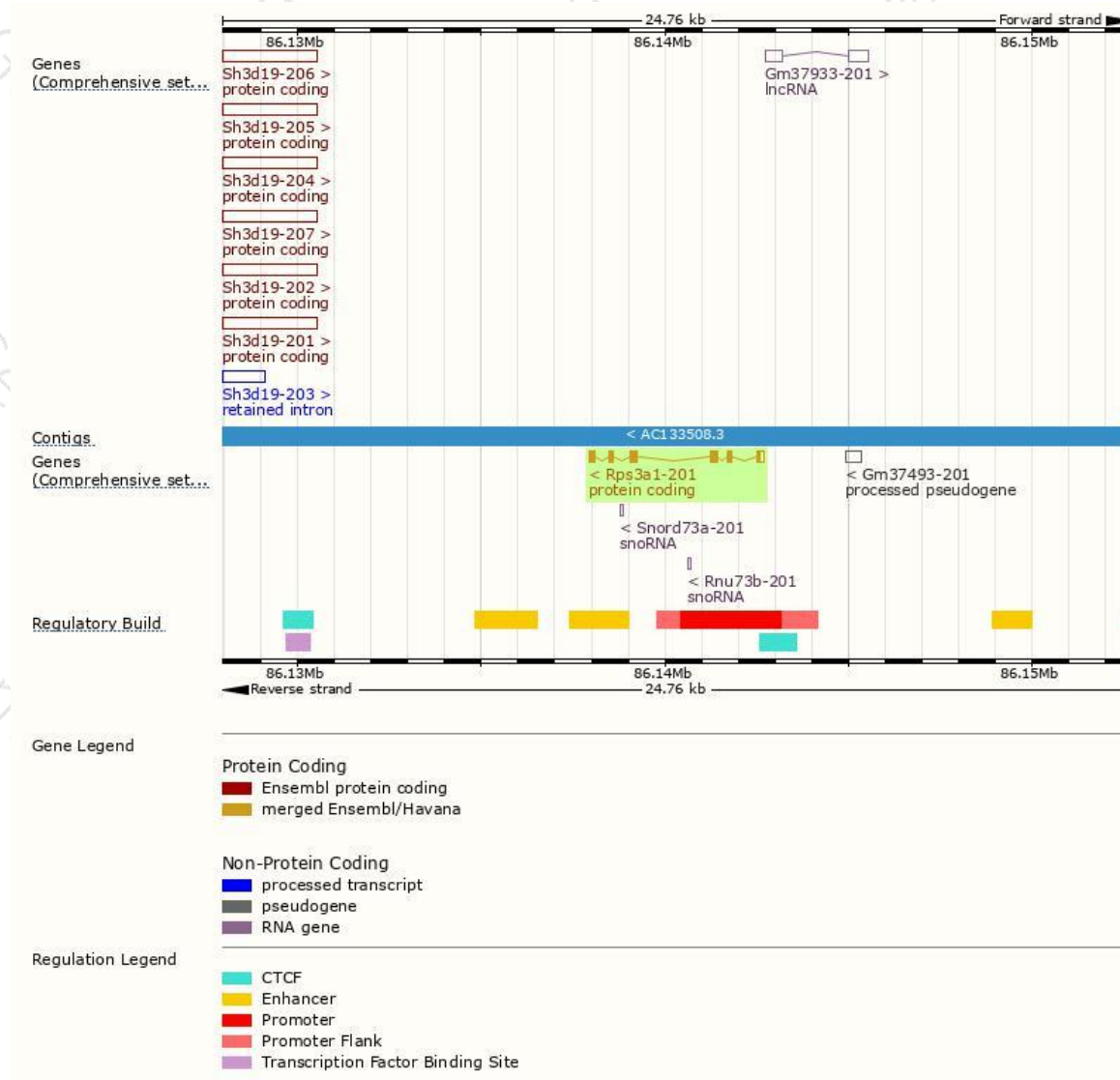
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rps3a1-201	ENSMUST00000029722.6	977	264aa	Protein coding	CCDS17446	P97351 Q564F3	TSL:1 GENCODE basic APPRIS P1

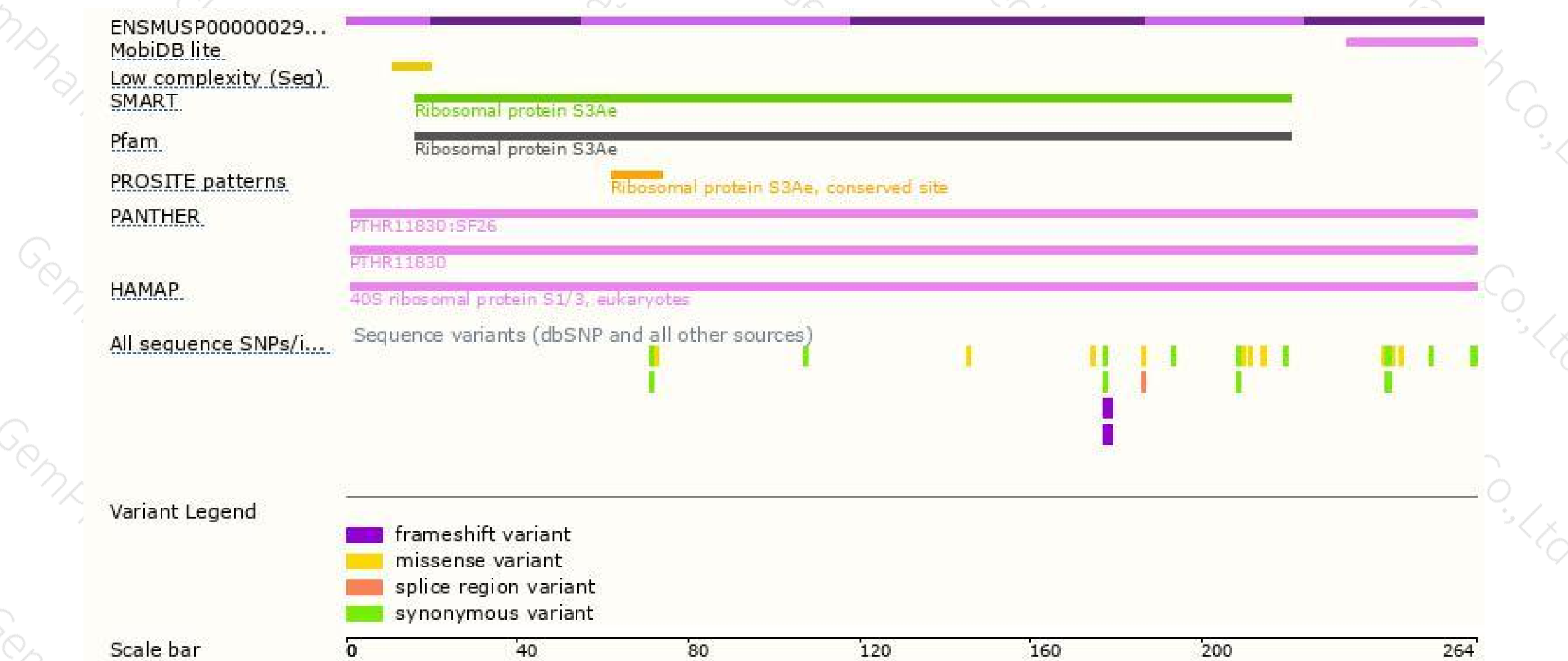
The strategy is based on the design of *Rps3a1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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