

***Sept6* Cas9-CKO Strategy**

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Project Overview

Project Name

Sept6

Project type

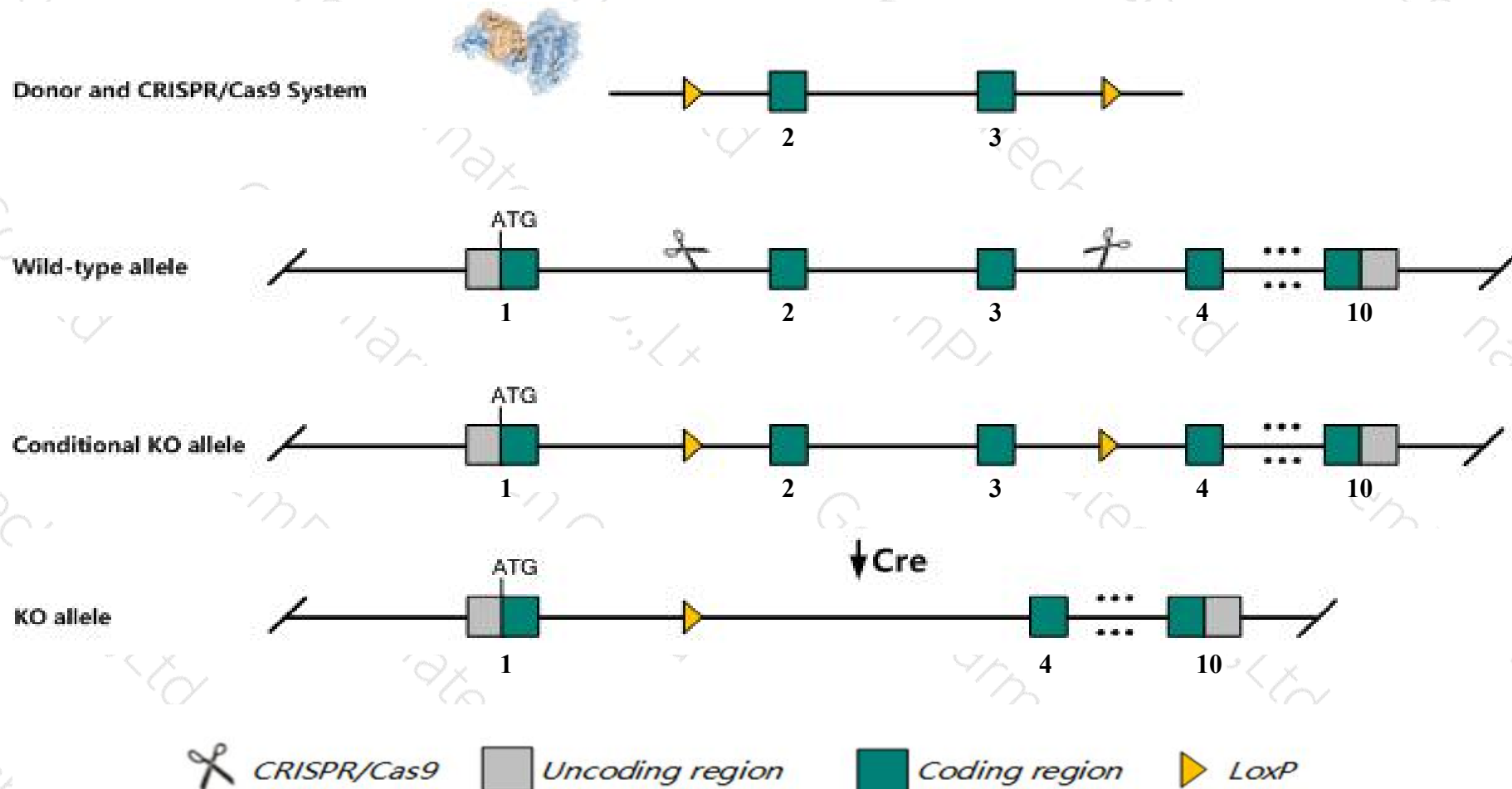
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Sept6* gene. The schematic diagram is as follows:



Technical routes

- The *Sept6* gene has 5 transcripts. According to the structure of *Sept6* gene, exon2-exon3 of *Sept6-201* (ENSMUST00000053456.10) transcript is recommended as the knockout region. The region contains 311bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Sept6* 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.

- According to the existing MGI data, Homozygous females and hemizygous males harboring a knock-out mutation in this gene have a normal lifespan and display neither gross abnormalities, changes in cytokinesis, nor spontaneous malignancies including leukemia.
- The *Sept6* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Septin6 septin 6 [*Mus musculus* (house mouse)]

Gene ID: 56526, updated on 12-Nov-2019

Summary

Official Symbol Septin6 provided by [MGI](#)
Official Full Name septin 6 provided by [MGI](#)
Primary source [MGI:MGI:1888939](#)
See related [Ensembl:ENSMUSG00000050379](#)
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 Sep6; Sept6; mKIAA0128; 2810035H17Rik; C920001C06Rik
Expression Broad expression in thymus adult (RPKM 14.7), CNS E18 (RPKM 10.5) and 20 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: X; X A3.3

See Septin6 in [Genome Data Viewer](#)

Exon count: 12

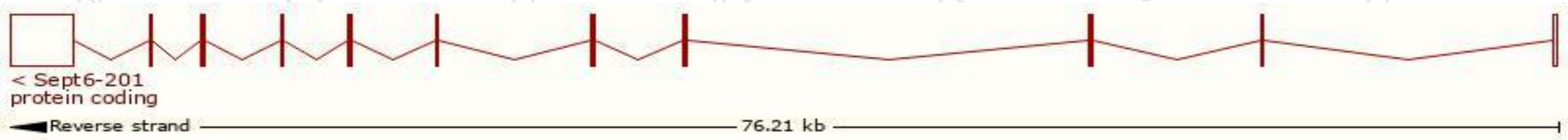
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	X	NC_000086.7 (36911272..36990036, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	X	NC_000086.6 (34451267..34529690, complement)

Transcript information (Ensembl)

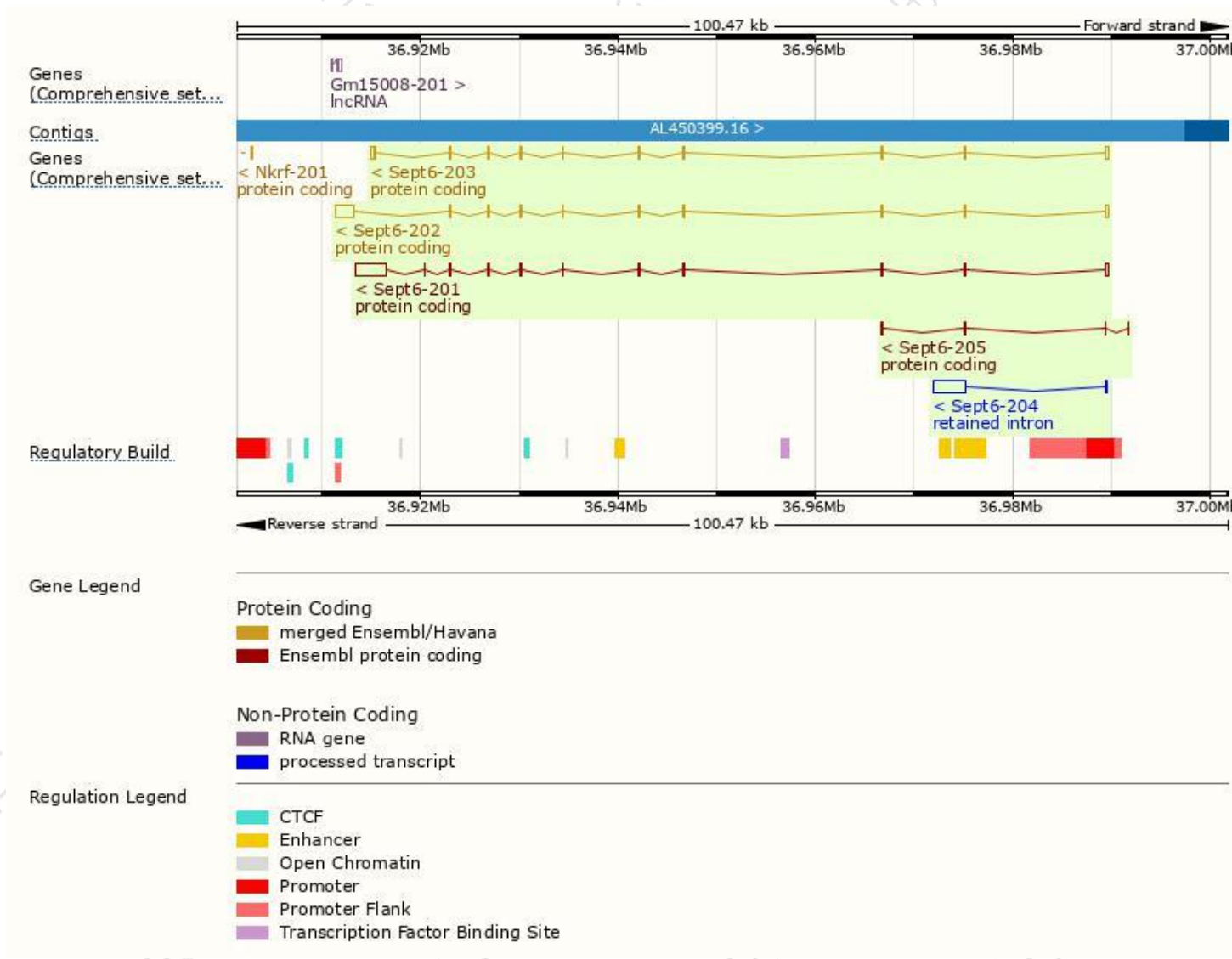
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Sept6-201	ENSMUST00000053456.10	4673	427aa	Protein coding	CCDS57749	Q9R1T4	TSL:1 GENCODE basic APPRIS ALT1
Sept6-202	ENSMUST00000060474.13	3457	429aa	Protein coding	CCDS30066	Q9R1T4	TSL:1 GENCODE basic APPRIS P3
Sept6-203	ENSMUST00000115239.9	1845	434aa	Protein coding	CCDS53051	Q9R1T4	TSL:1 GENCODE basic APPRIS ALT1
Sept6-205	ENSMUST00000152291.2	530	141aa	Protein coding	-	A2A3W1	CDS 3' incomplete TSL:3
Sept6-204	ENSMUST00000128766.1	3389	No protein	Retained intron	-	-	TSL:1

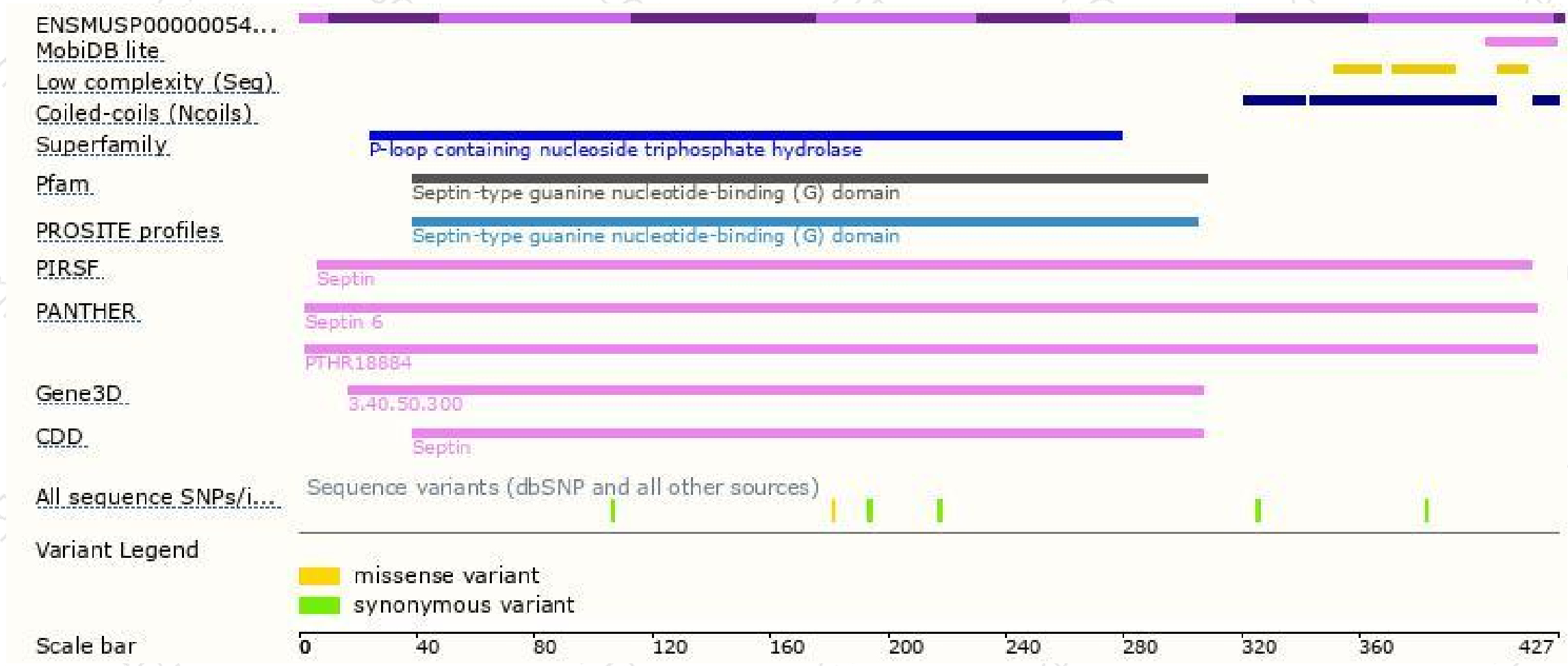
The strategy is based on the design of *Sept6-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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