

Snrpc Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Yanhua Shen

Date: 2019-10-17

Project Overview

Project Name

Snrpc

Project type

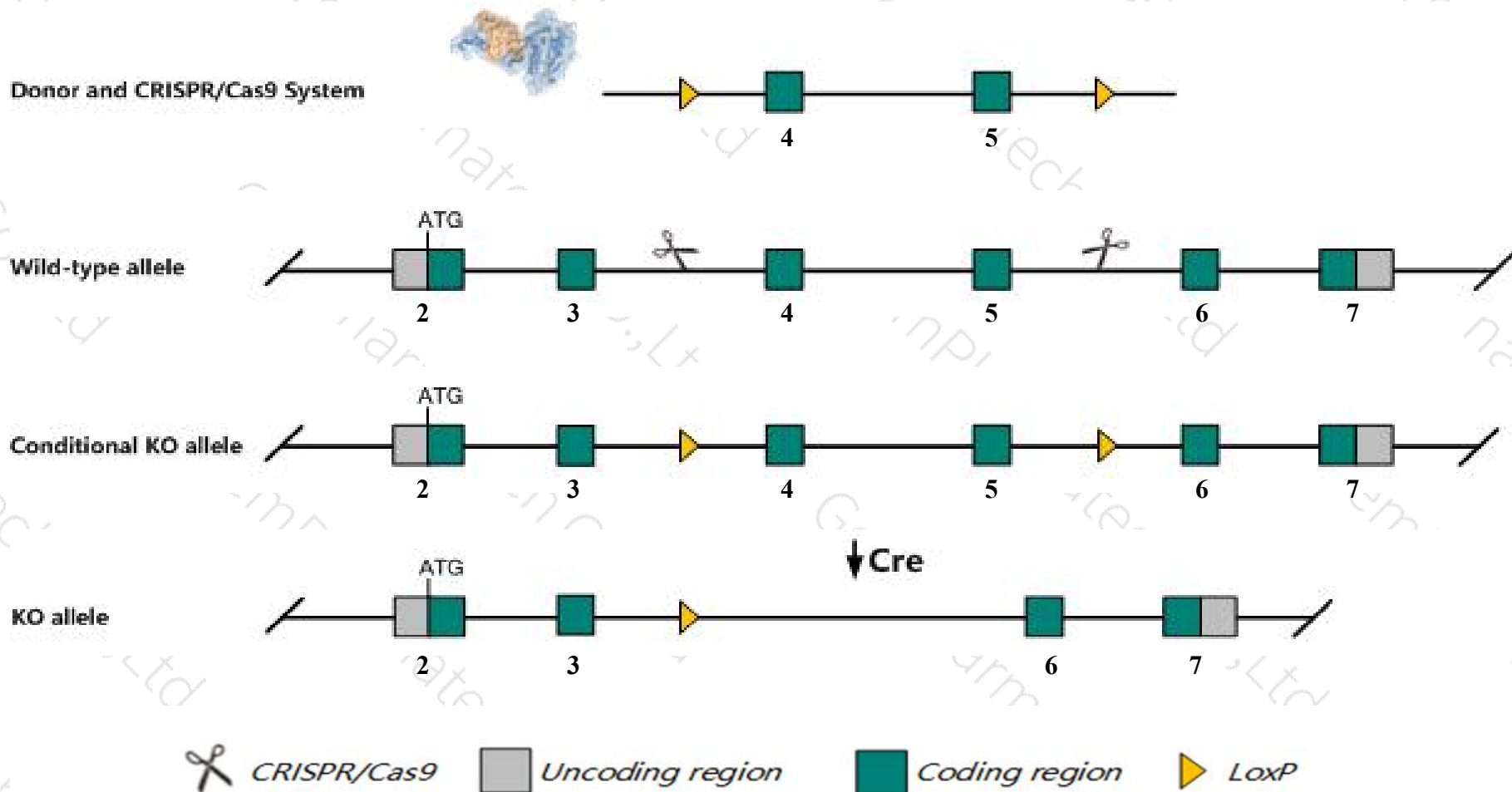
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Snrpc* gene has 5 transcripts. According to the structure of *Snrpc* gene, exon4-exon5 of *Snrpc*-203 (ENSMUST00000232873.1) transcript is recommended as the knockout region. The region contains 199bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Snrpc* 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

- Transcript *Snrpc*-202 will be destroyed directly in this strategy.
- The *Snrpc* gene is located on the Chr17. 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)

Snrpc U1 small nuclear ribonucleoprotein C [*Mus musculus* (house mouse)]

Gene ID: 20630, updated on 12-Aug-2019

Summary

Official Symbol	Snrpc provided by MGI
Official Full Name	U1 small nuclear ribonucleoprotein C provided by MGI
Primary source	MGI:MGI:109489
See related	Ensembl:ENSMUSG00000024217
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	U1C; U1-C; Snrp1c
Expression	Ubiquitous expression in adrenal adult (RPKM 61.0), duodenum adult (RPKM 57.2) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 17; 17 A3.3

See Snrpc in [Genome Data Viewer](#)

Exon count: 6

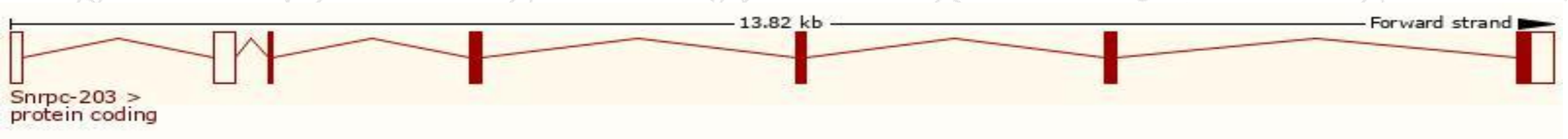
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	17	NC_000083.6 (27840028..27851968)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	17	NC_000083.5 (27977032..27988913)

Transcript information (Ensembl)

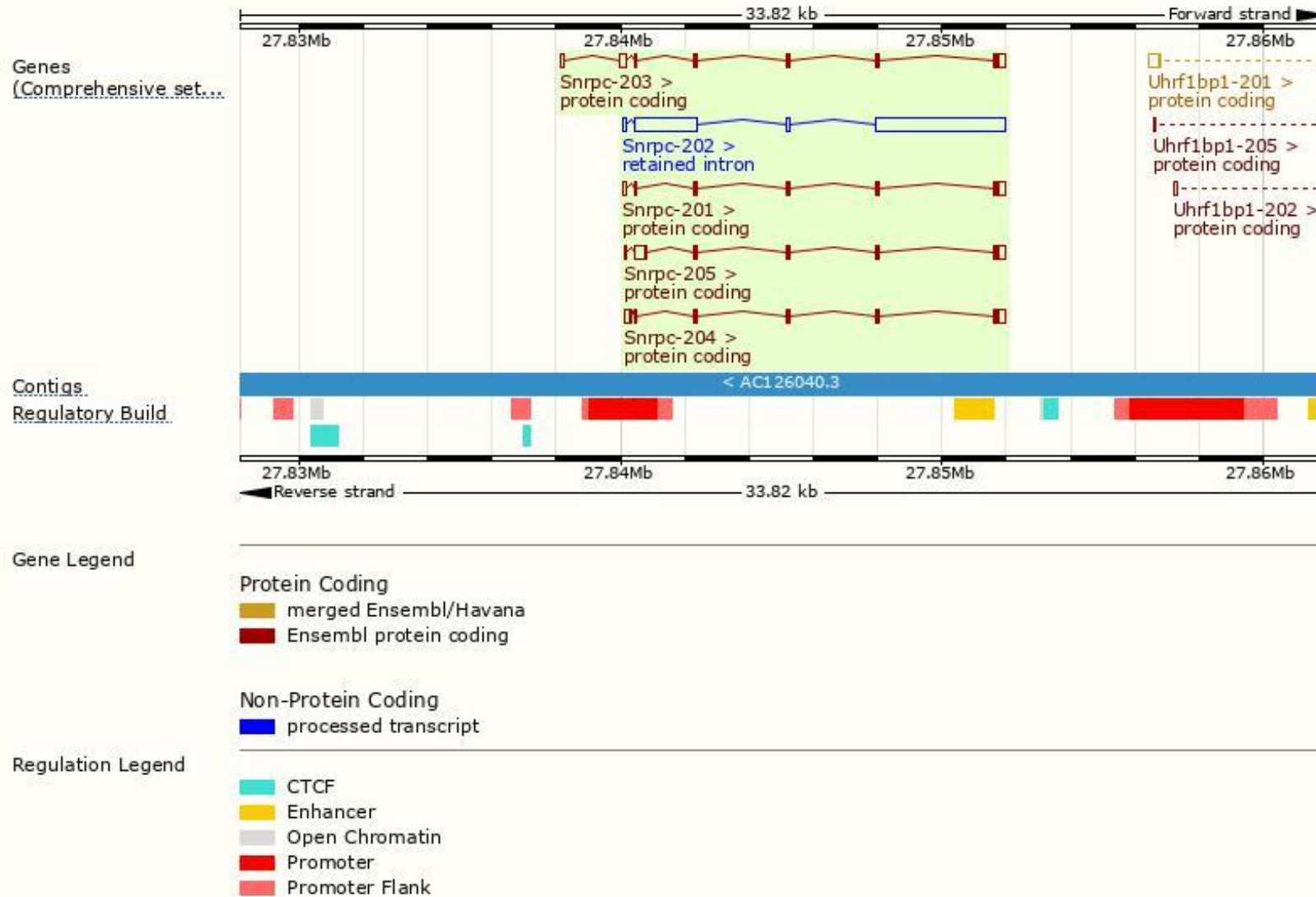
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snrpc-203	ENSMUST00000232873.1	984	159aa	Protein coding	CCDS28570	Q569X3 Q62241	GENCODE basic APPRIS P1
Snrpc-201	ENSMUST00000071006.8	758	159aa	Protein coding	CCDS28570	Q569X3 Q62241	TSL:1 GENCODE basic APPRIS P1
Snrpc-205	ENSMUST00000233752.1	1013	157aa	Protein coding	-	A0A3B2W450	GENCODE basic
Snrpc-204	ENSMUST00000233657.1	882	182aa	Protein coding	-	A0A3B2WCR6	GENCODE basic
Snrpc-202	ENSMUST00000137581.2	6107	No protein	Retained intron	-	-	TSL:1

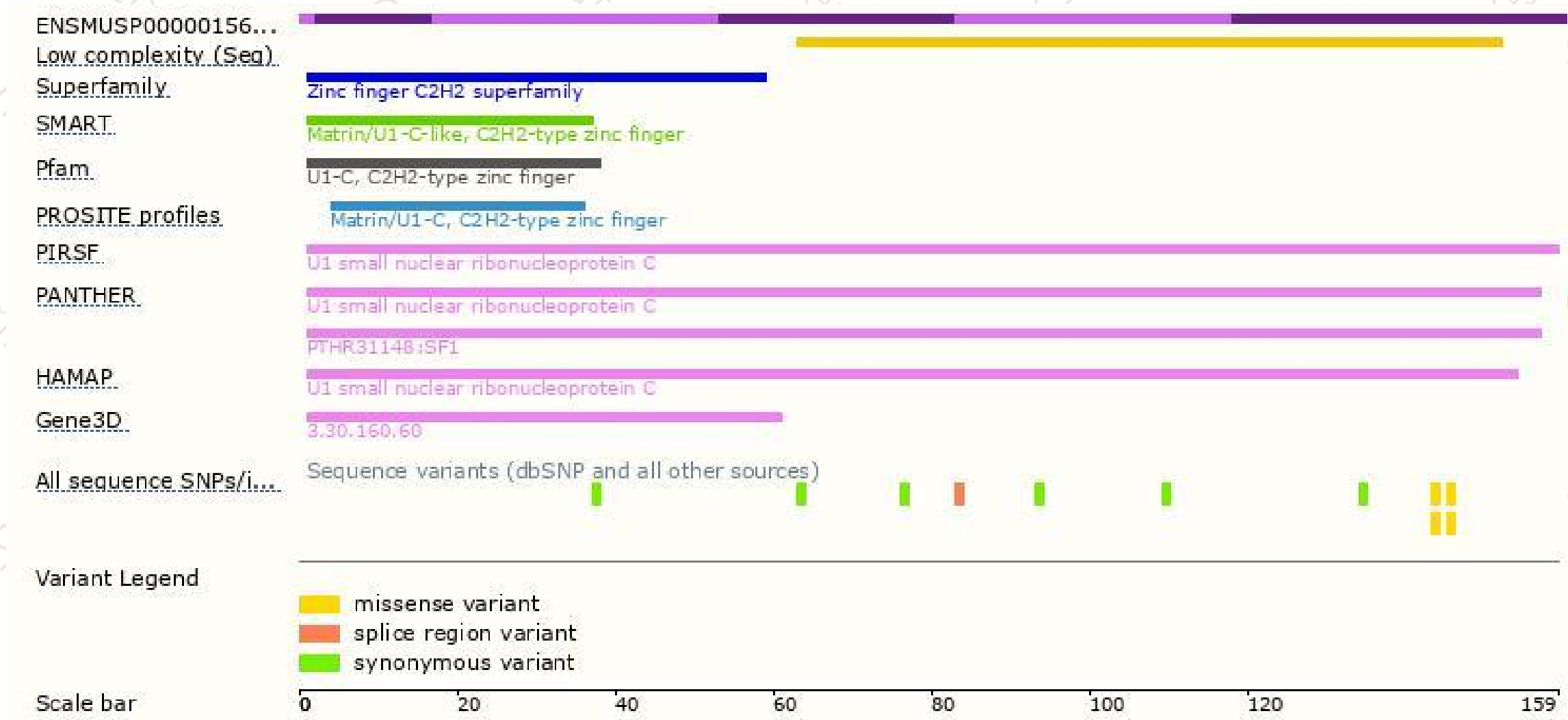
The strategy is based on the design of *Snrpc-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

