Snrpd3 Cas9-KO Strategy

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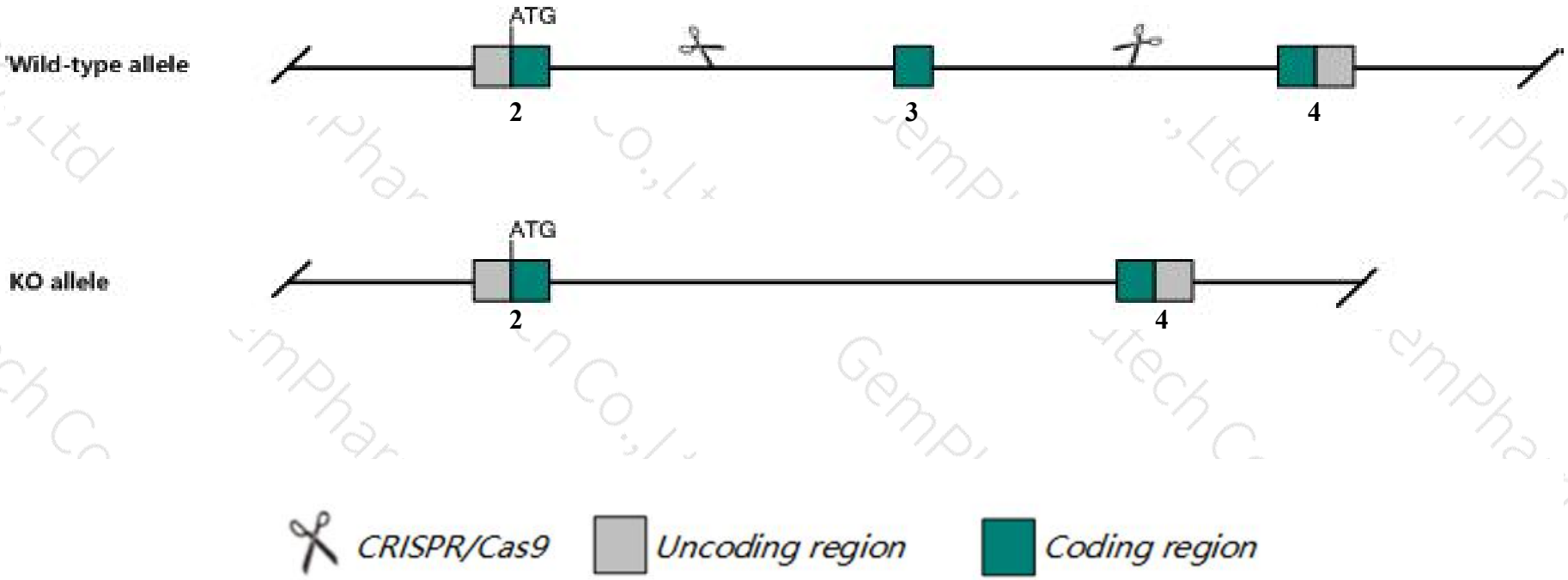
Date:2019-10-17

Project Overview

Project Name	***Snrpd3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Snrpd3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Snrpd3* gene has 3 transcripts. According to the structure of *Snrpd3* gene, exon3 of *Snrpd3-201* (ENSMUST00000020397.10) transcript is recommended as the knockout region.The region contains 193bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Snrpd3* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

➢ The *Snrpd3* gene is located on the Chr10. 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）

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Snrpd3 small nuclear ribonucleoprotein D3 [*Mus musculus* (house mouse)]

Gene ID: 67332, updated on 12-Aug-2019

Summary

Official Symbol	Snrpd3 provided by MGI
Official Full Name	small nuclear ribonucleoprotein D3 provided by MGI
Primary source	MGI:MGI:1914582
See related	Ensembl:ENSMUSG00000020180
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	SMD3; AW046420; 1700043E15Rik; 2310009E13Rik
Expression	Broad expression in CNS E11.5 (RPKM 87.5), liver E14 (RPKM 79.5) and 24 other tissues See more
Orthologs	human all

Genomic context

Location: 10; 10 C1

See Snrpd3 in Genome Data Viewer

Exon count: 4

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	10	NC_000076.6 (75518042..75535440)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	10	NC_000076.5 (74980787..74998185)

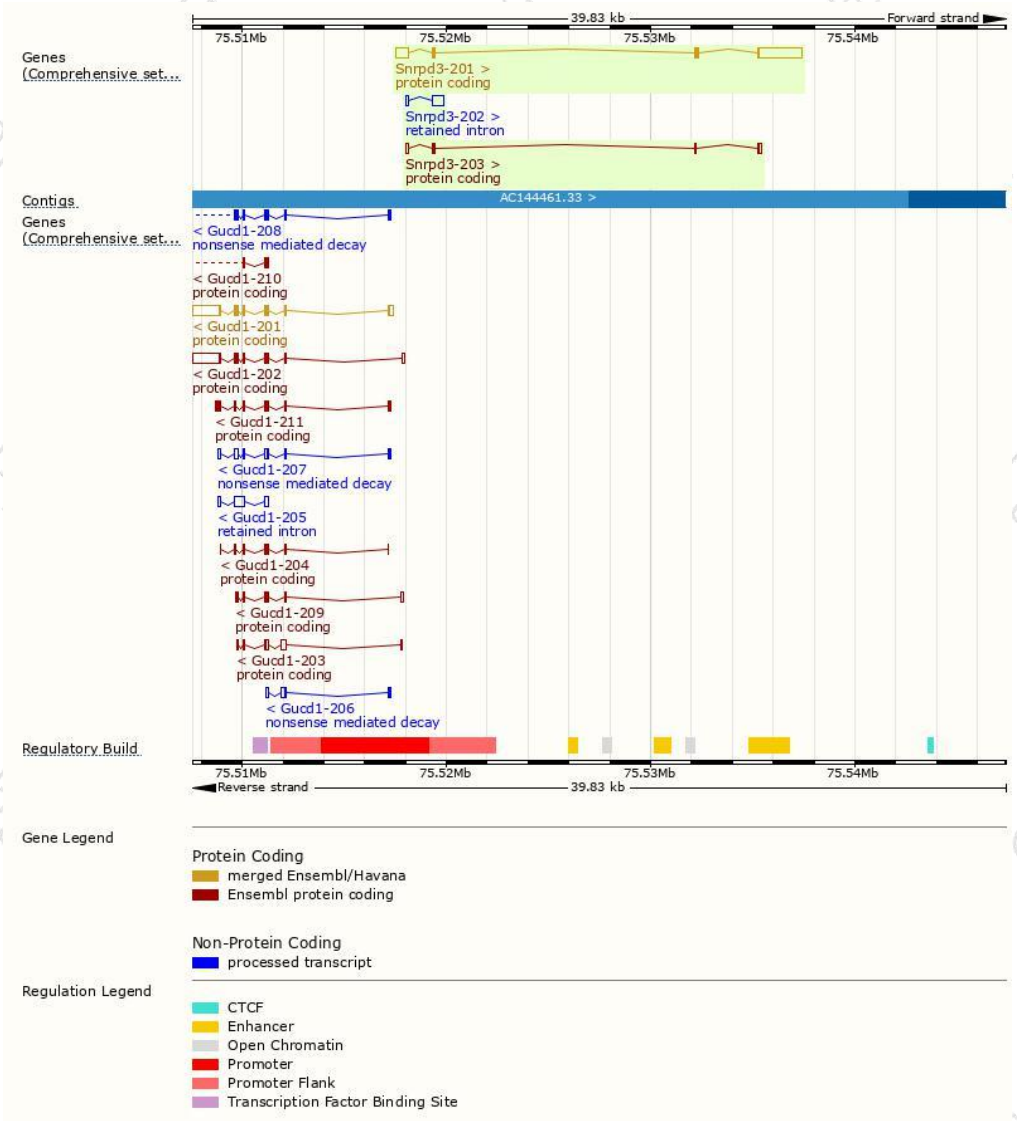
Transcript information（Ensembl）

The gene has 3 transcripts,all transcripts are shown below:

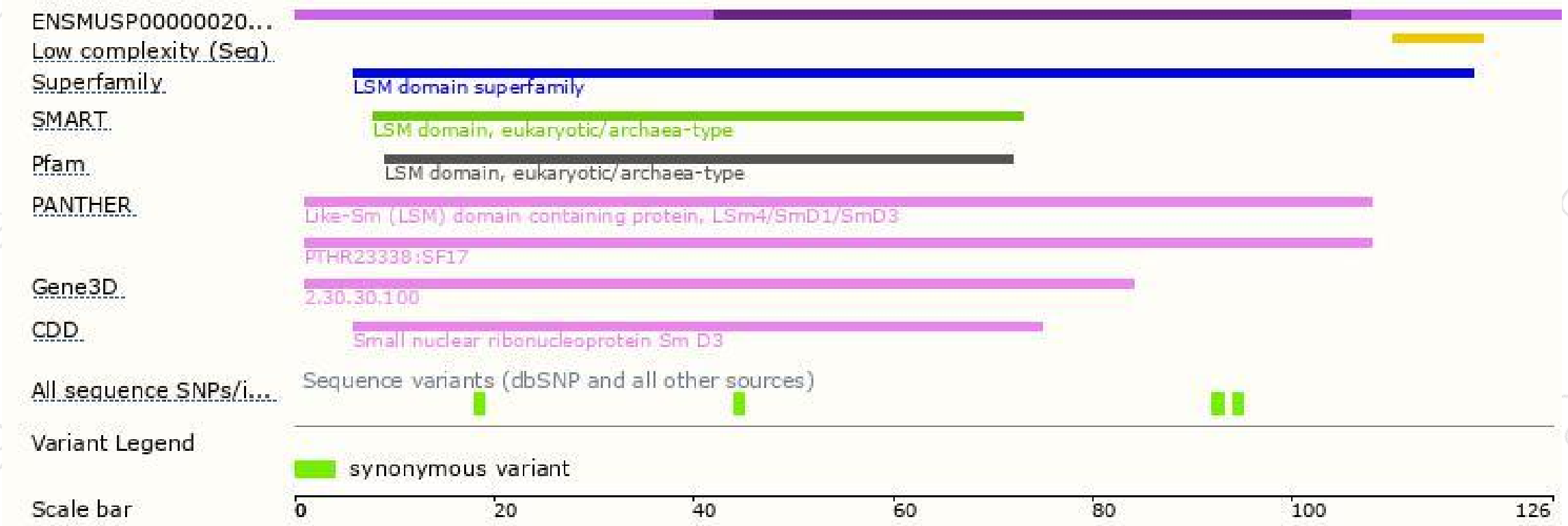
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snrpd3-201	ENSMUST00000020397.10	3036	126aa	Protein coding	CCDS23926	P62320	TSL:1 GENCODE basic APPRIS P1
Snrpd3-203	ENSMUST00000220229.1	442	84aa	Protein coding	-	A0A1W2P7K5	TSL:3 GENCODE basic
Snrpd3-202	ENSMUST00000191097.1	665	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Snrpd3-201* transcript,The transcription is shown below

Genomic location distribution



Protein domain



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

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