

Snrpd1 Cas9-KO Strategy

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Date: 2019-10-17

Project Overview

Project Name

Snrpd1

Project type

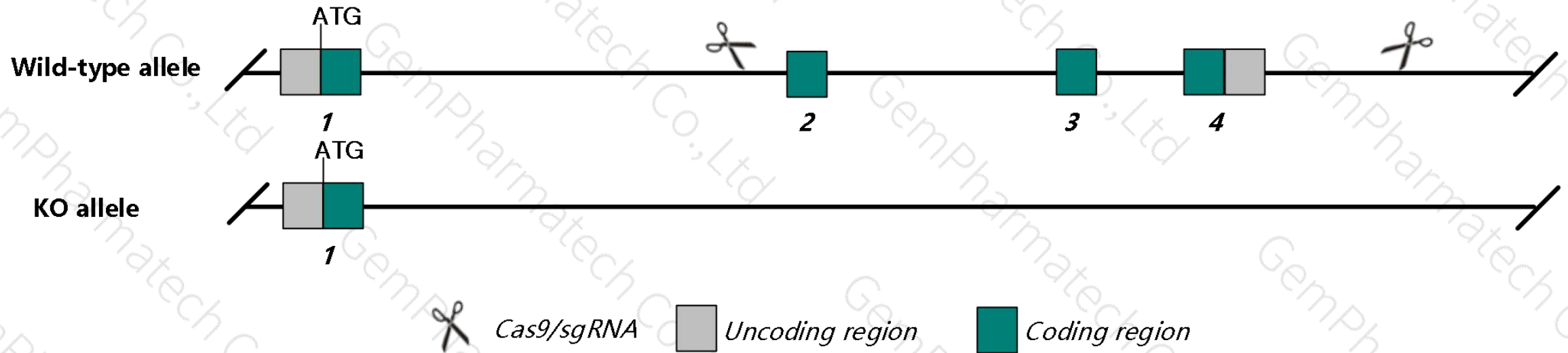
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Snrpd1* gene. The schematic diagram is as follows:



- The *Snrpd1* gene has 5 transcripts. According to the structure of *Snrpd1* gene, exon2-exon4 of *Snrpd1-201* (ENSMUST00000002551.4) transcript is recommended as the knockout region. The region contains most 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 *Snrpd1* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 *Snrpd1* gene is located on the Chr18. 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)

Snrpd1 small nuclear ribonucleoprotein D1 [*Mus musculus* (house mouse)]

Gene ID: 20641, updated on 12-Aug-2019

Summary

Official Symbol	Snrpd1 provided by MGI
Official Full Name	small nuclear ribonucleoprotein D1 provided by MGI
Primary source	MGI:MGI:98344
See related	Ensembl:ENSMUSG00000002477
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	SMD1; AA407109; AL023031
Expression	Biased expression in liver E14 (RPKM 92.1), CNS E11.5 (RPKM 90.4) and 14 other tissues See more
Orthologs	human all

Genomic context

Location: 18; 18 A1

See Snrpd1 in [Genome Data Viewer](#)

Exon count: 4

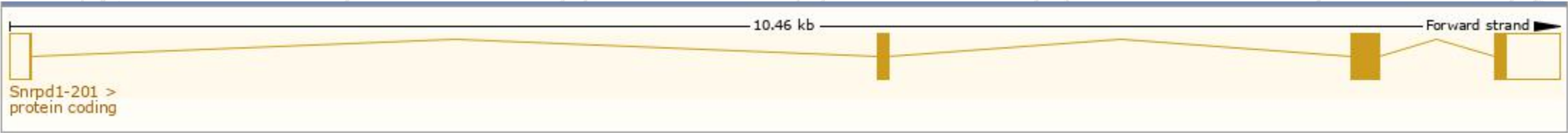
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	18	NC_000084.6 (10617796..10628230)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	18	NC_000084.5 (10617794..10628228)

Transcript information (Ensembl)

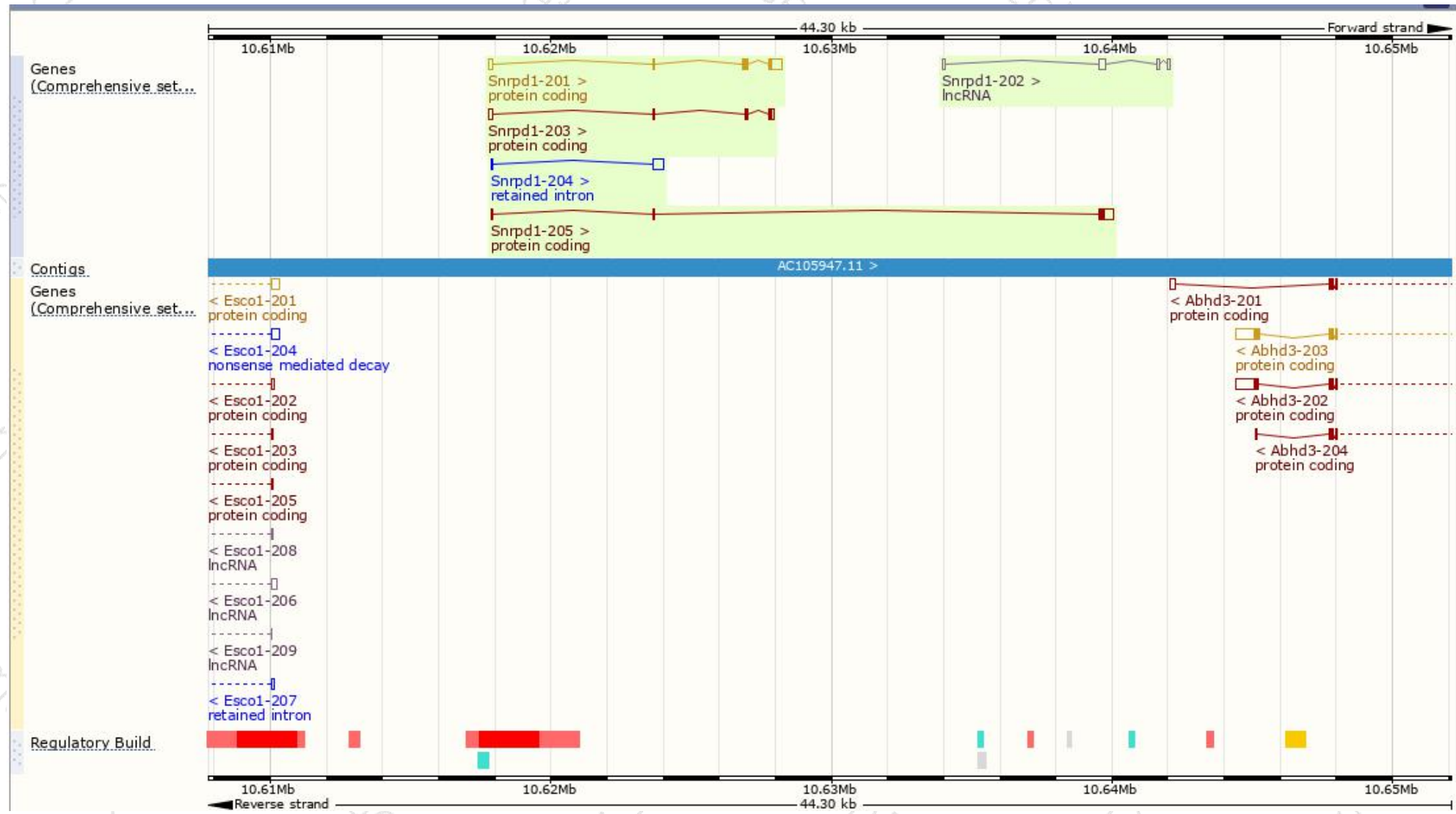
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snrpd1-201	ENSMUST00000002551.4	858	119aa	Protein coding	CCDS29056	P62315	TSL:1 GENCODE basic APPRIS P1
Snrpd1-205	ENSMUST00000235020.1	670	98aa	Protein coding	-	A0A3Q4L2W0	GENCODE basic
Snrpd1-203	ENSMUST00000234207.1	439	78aa	Protein coding	-	A0A3Q4L381	GENCODE basic
Snrpd1-204	ENSMUST00000234728.1	439	No protein	Retained intron	-	-	-
Snrpd1-202	ENSMUST00000234077.1	578	No protein	lncRNA	-	-	-

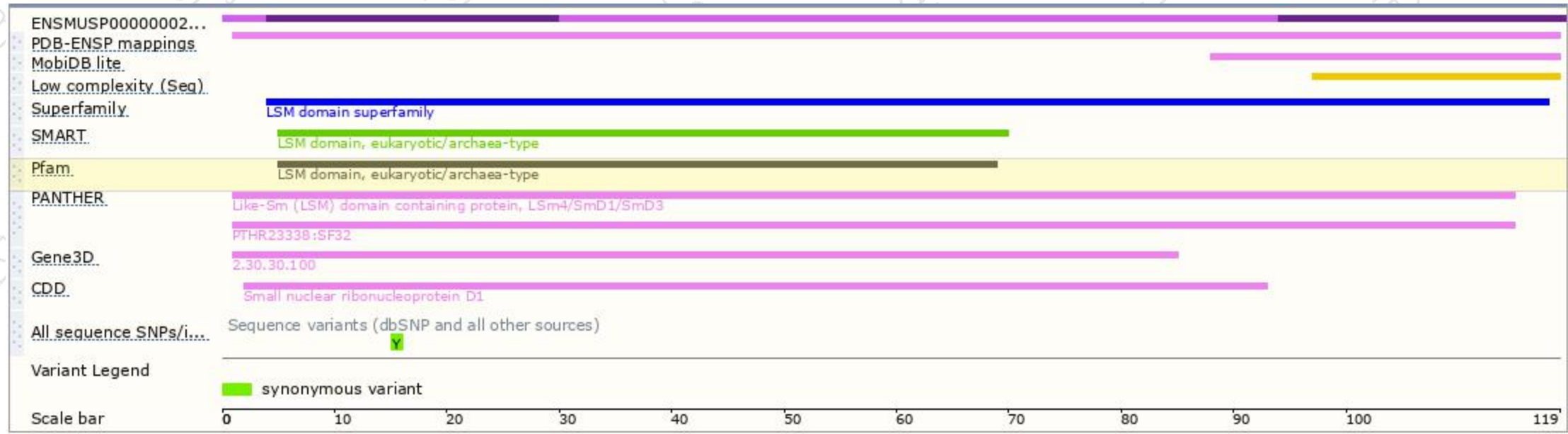
The strategy is based on the design of *Snrpd1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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