

Snrpg Cas9-CKO Strategy

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Design Date: 2021-7-20

Project Overview

Project Name

Snrpg

Project type

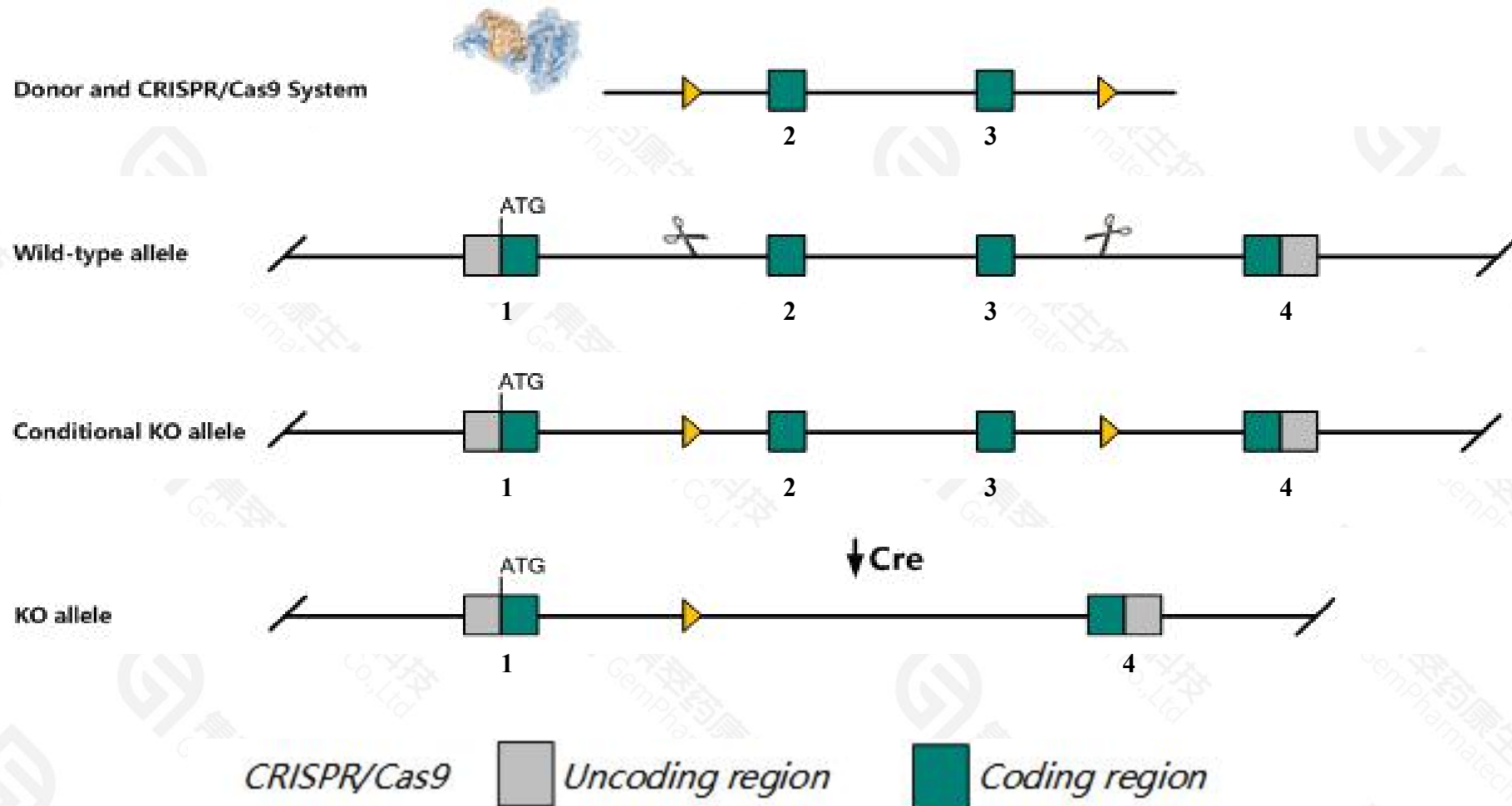
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Snrpg* gene has 4 transcripts. According to the structure of *Snrpg* gene, exon2-exon3 of *Snrpg*-201(ENSMUST00000089558.7) transcript is recommended as the knockout region. The region contains 148bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Snrpg* 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 was 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.

- The *Snrpg* gene is located on the Chr6. 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.
- The KO region contains functional region of the *Gm44941* gene. Knockout the region may affect the function of *Gm44941* gene.
- 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)

Snrpg small nuclear ribonucleoprotein polypeptide G [Mus musculus (house mouse)]

Gene ID: 68011, updated on 25-Sep-2020

Summary



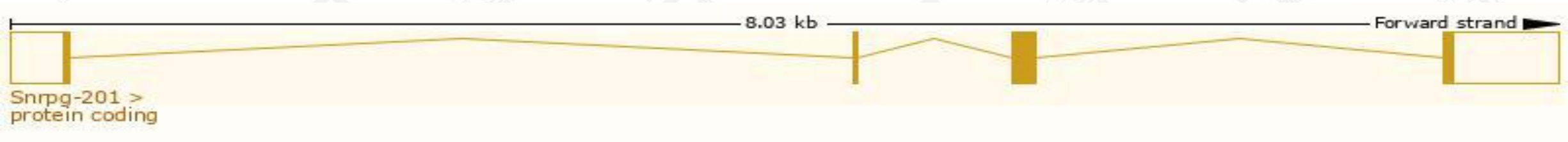
Official Symbol	Snrpg provided by MGI
Official Full Name	small nuclear ribonucleoprotein polypeptide G provided by MGI
Primary source	MGI:MGI:1915261
See related	Ensembl:ENSMUSG00000057278
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810024K17Rik, AL022803, D15Mgi2, SM, SMG, sm-G, snRNP-G
Expression	Broad expression in CNS E11.5 (RPKM 172.5), liver E14 (RPKM 152.1) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

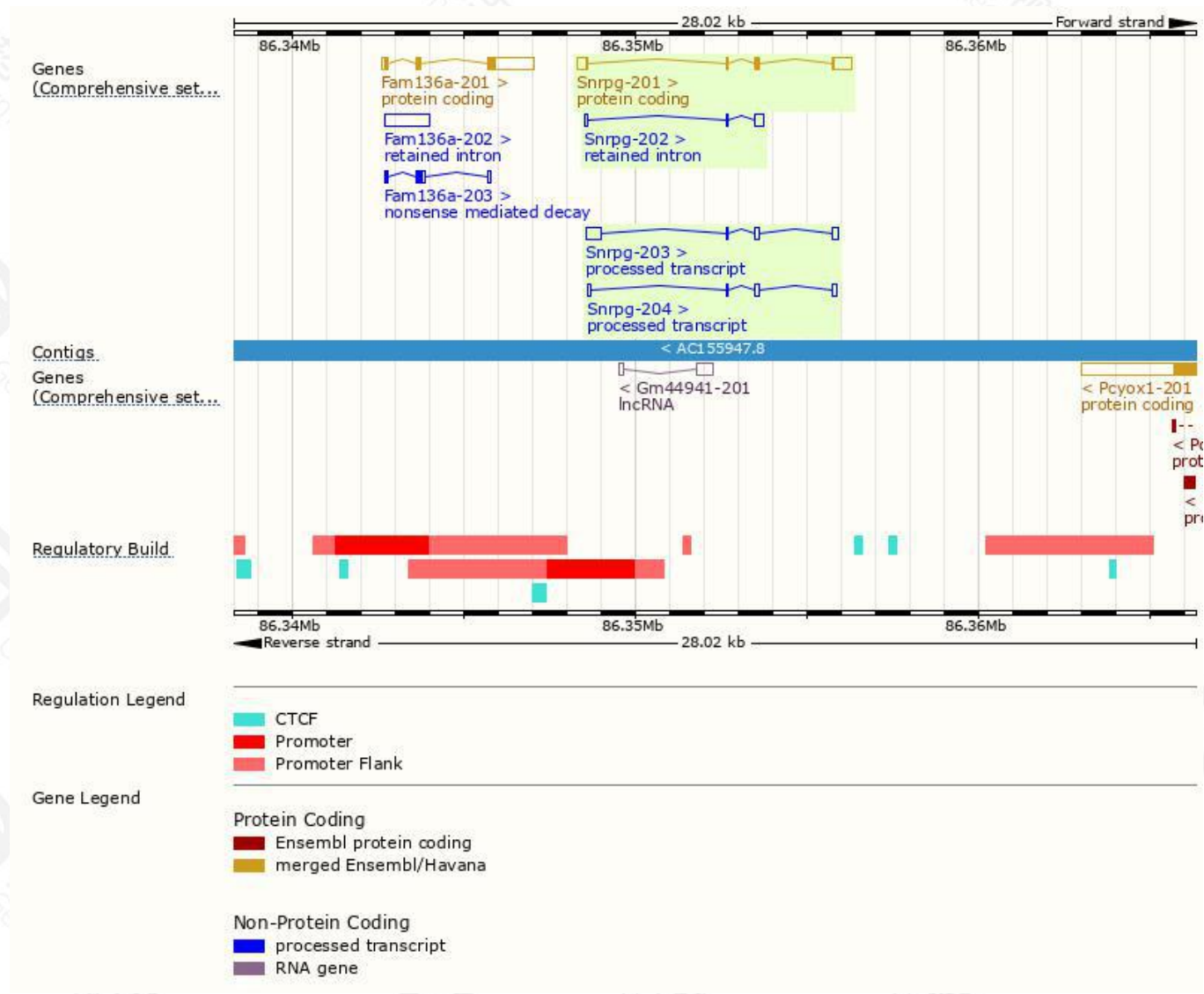
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snrng-201	ENSMUST00000089558.7	1055	76aa	Protein coding	CCDS39541		TSL:1 , GENCODE basic , APPRIS P1 ,
Snrng-203	ENSMUST00000204380.3	746	No protein	Processed transcript	-		TSL:1 ,
Snrng-204	ENSMUST00000204768.2	375	No protein	Processed transcript	-		TSL:3 ,
Snrng-202	ENSMUST00000203782.3	357	No protein	Retained intron	-		TSL:2 ,

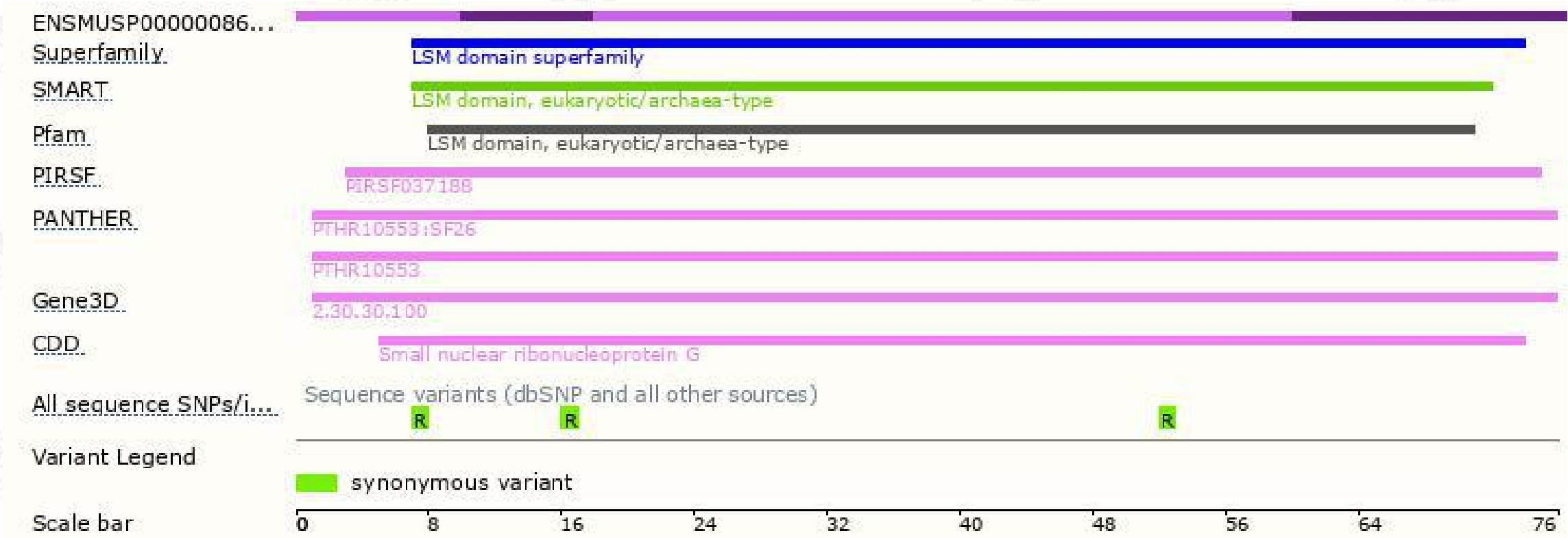
The strategy is based on the design of *Snrng-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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