Snrpb Cas9-CKO Strategy

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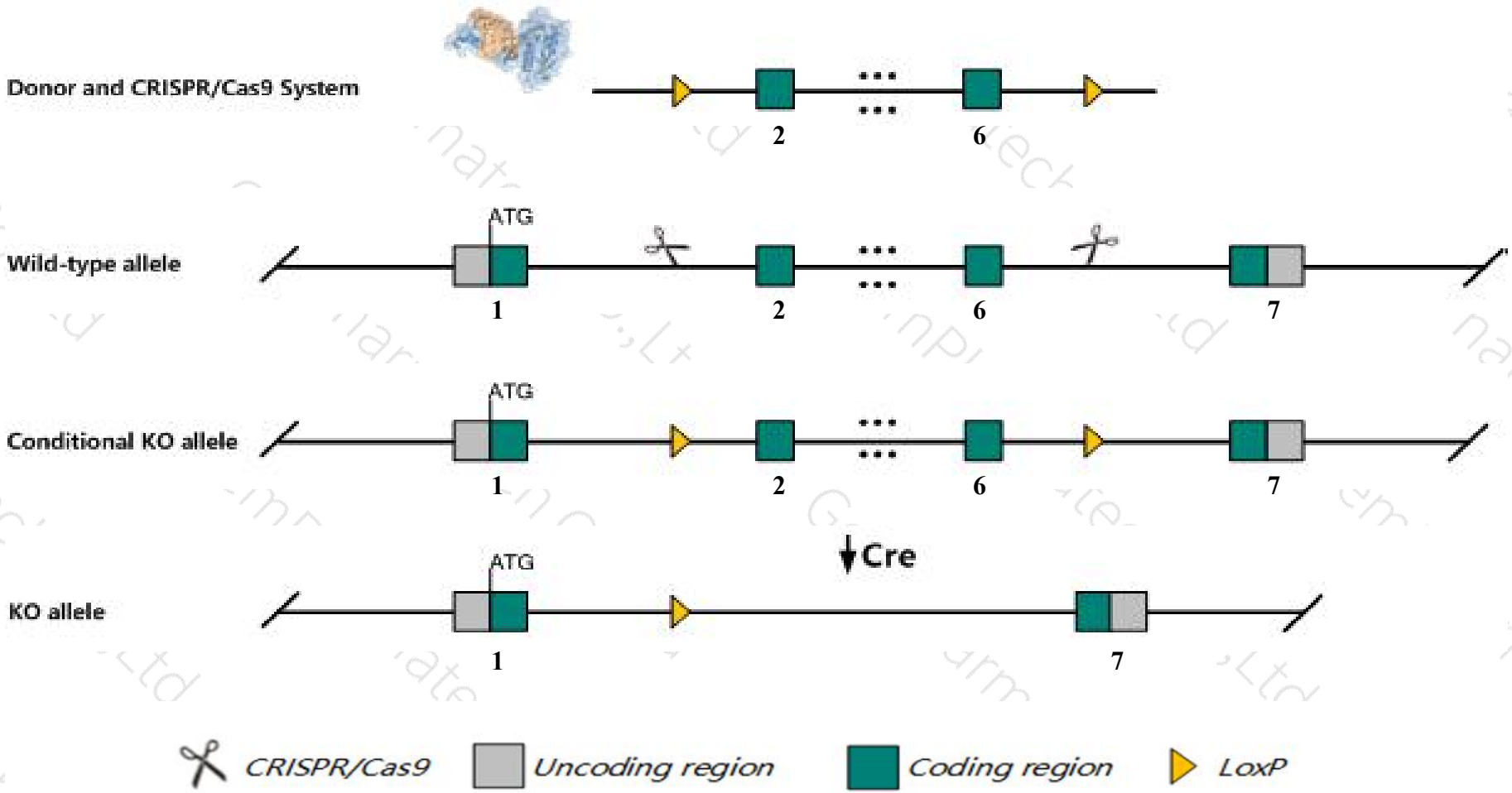
Project Overview

Project Name	***Snrpb***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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



Technical routes

- The *Snrpb* gene has 4 transcripts. According to the structure of *Snrpb* gene, exon2-exon6 of *Snrpb-201* (ENSMUST00000103199.8) transcript is recommended as the knockout region.The region contains 682bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Snrpb* 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

➢ The *Snrpb* gene is located on the Chr2. 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）

集萃药康 GemPharmatech

Snrpb small nuclear ribonucleoprotein B [*Mus musculus* (house mouse)]

Gene ID: 20638, updated on 12-Aug-2019

Summary

Official Symbol	Snrpb provided by MGI
Official Full Name	small nuclear ribonucleoprotein B provided by MGI
Primary source	MGI:MGI:98342
See related	Ensembl:ENSMUSG00000027404
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	SMB; SM-B; SM11; SNRNP-B; AL024368; AU018828
Expression	Ubiquitous expression in ovary adult (RPKM 137.1), adrenal adult (RPKM 133.2) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 2 F1; 2 63.19 cM

See Snrpb in Genome Data Viewer

Exon count: 8

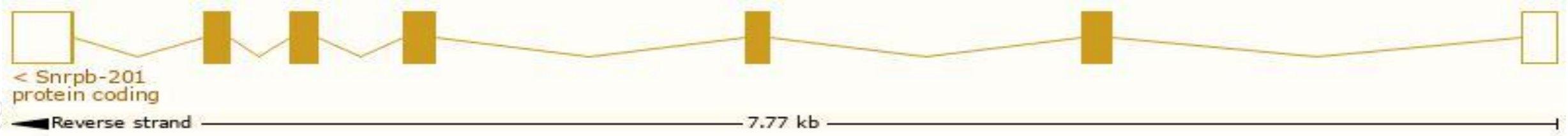
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	2	NC_000068.7 (130171636..130179382, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	2	NC_000068.6 (129997372..130005100, complement)

Transcript information（Ensembl）

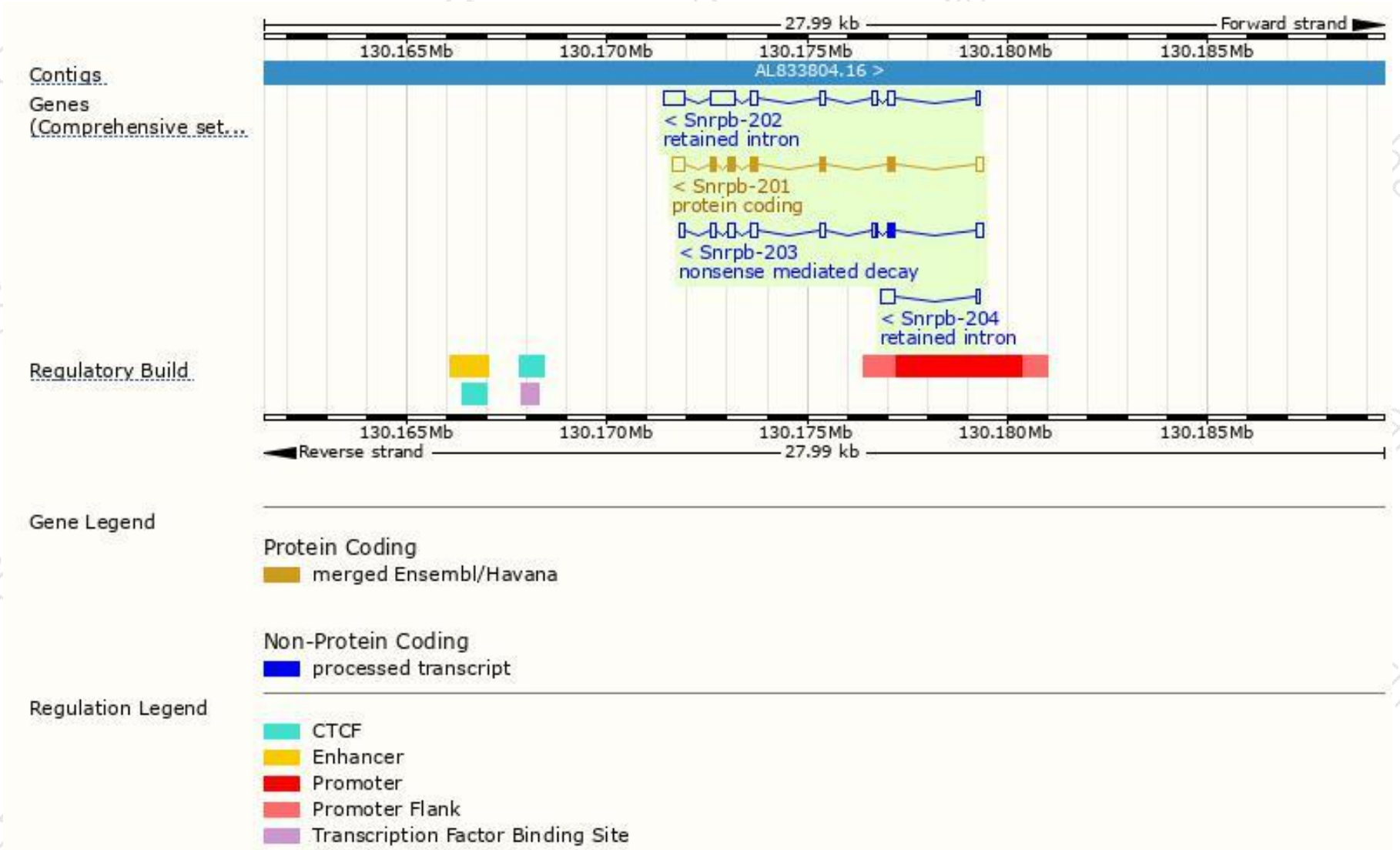
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snrpb-201	ENSMUST00000103199.8	1161	231aa	Protein coding	CCDS16735	P27048	TSL:1 GENCODE basic APPRIS P1
Snrpb-203	ENSMUST00000147570.2	1133	70aa	Nonsense mediated decay	-	A0A0G2JGN4	TSL:5
Snrpb-202	ENSMUST00000139225.7	1711	No protein	Retained intron	-	-	TSL:5
Snrpb-204	ENSMUST00000150835.1	416	No protein	Retained intron	-	-	TSL:2

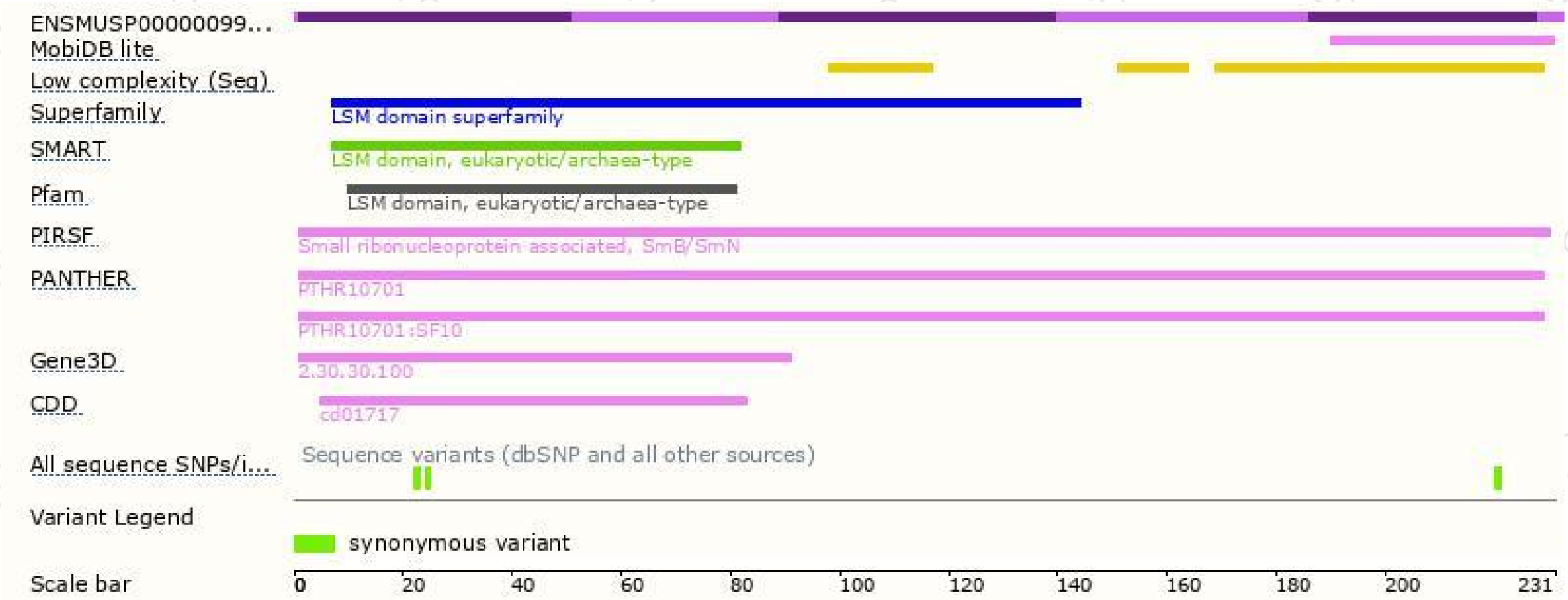
The strategy is based on the design of *Snrpb-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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