Snw1 Cas9-CKO Strategy

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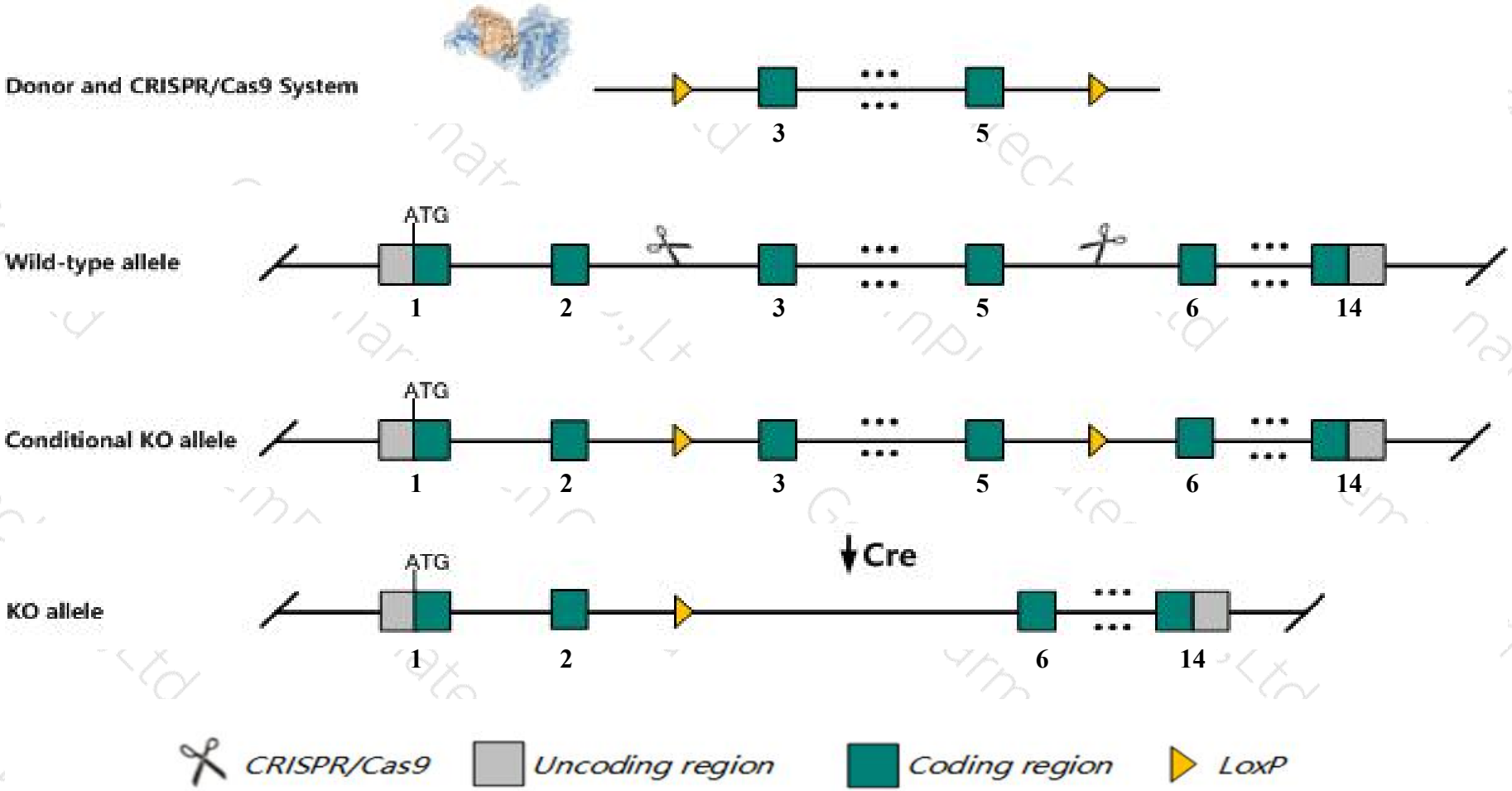
Project Overview

Project Name	***Snw1***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Snw1* gene. The schematic diagram is as follows:



Technical routes

- The *Snw1* gene has 3 transcripts. According to the structure of *Snw1* gene, exon3-exon5 of *Snw1-201* (ENSMUST00000021428.8) transcript is recommended as the knockout region.The region contains 365bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Snw1* 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 *Snw1* gene is located on the Chr12. 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）

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Snw1 SNW domain containing 1 [*Mus musculus* (house mouse)]

Gene ID: 66354, updated on 12-Aug-2019

Summary

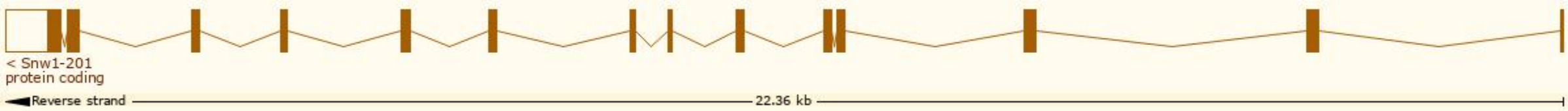
Official Symbol	Snw1 provided by MGI
Official Full Name	SNW domain containing 1 provided by MGI
Primary source	MGI:MGI:1913604
See related	Ensembl:ENSMUSG00000021039
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	SKIP; Skiip; NCoA-62; AW048543; 2310008B08Rik
Expression	Broad expression in CNS E11.5 (RPKM 29.9), bladder adult (RPKM 19.2) and 23 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

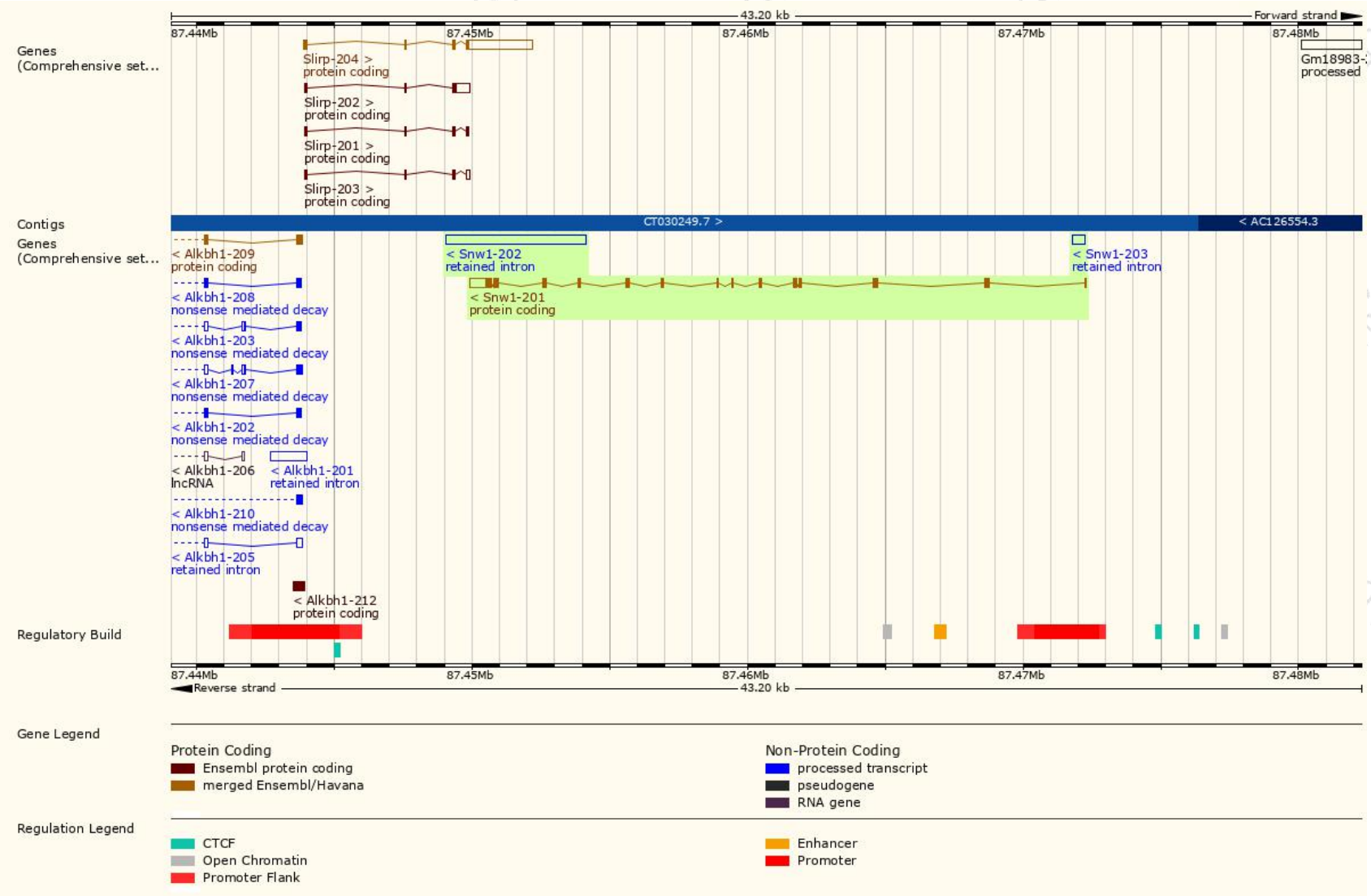
The gene has 3 transcripts,all transcripts are shown below:

Name ▲	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snw1-201	ENSMUST00000021428.8	2232	536aa	Protein coding	CCDS49121	A0A0B4J1E2	TSL:1 GENCODE basic APPRIS P1
Snw1-202	ENSMUST00000222579.1	5083	No protein	Retained intron	-	-	TSL:NA
Snw1-203	ENSMUST00000223119.1	479	No protein	Retained intron	-	-	TSL:NA

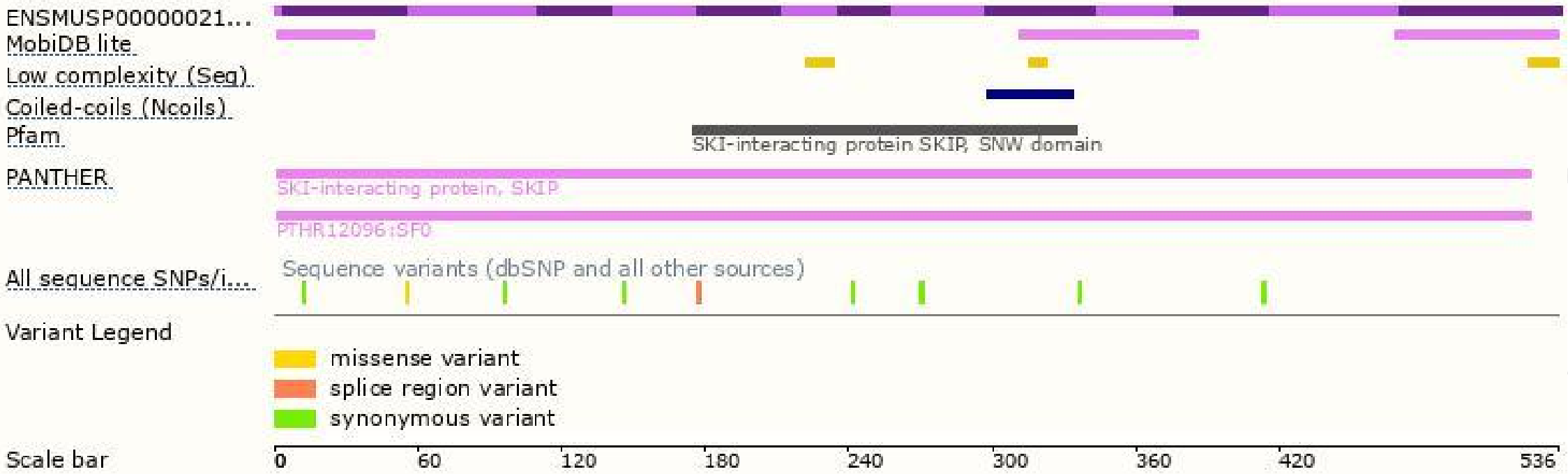
The strategy is based on the design of *Snw1-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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