

***Btnl9* Cas9-CKO Strategy**

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Project Overview

Project Name

Btnl9

Project type

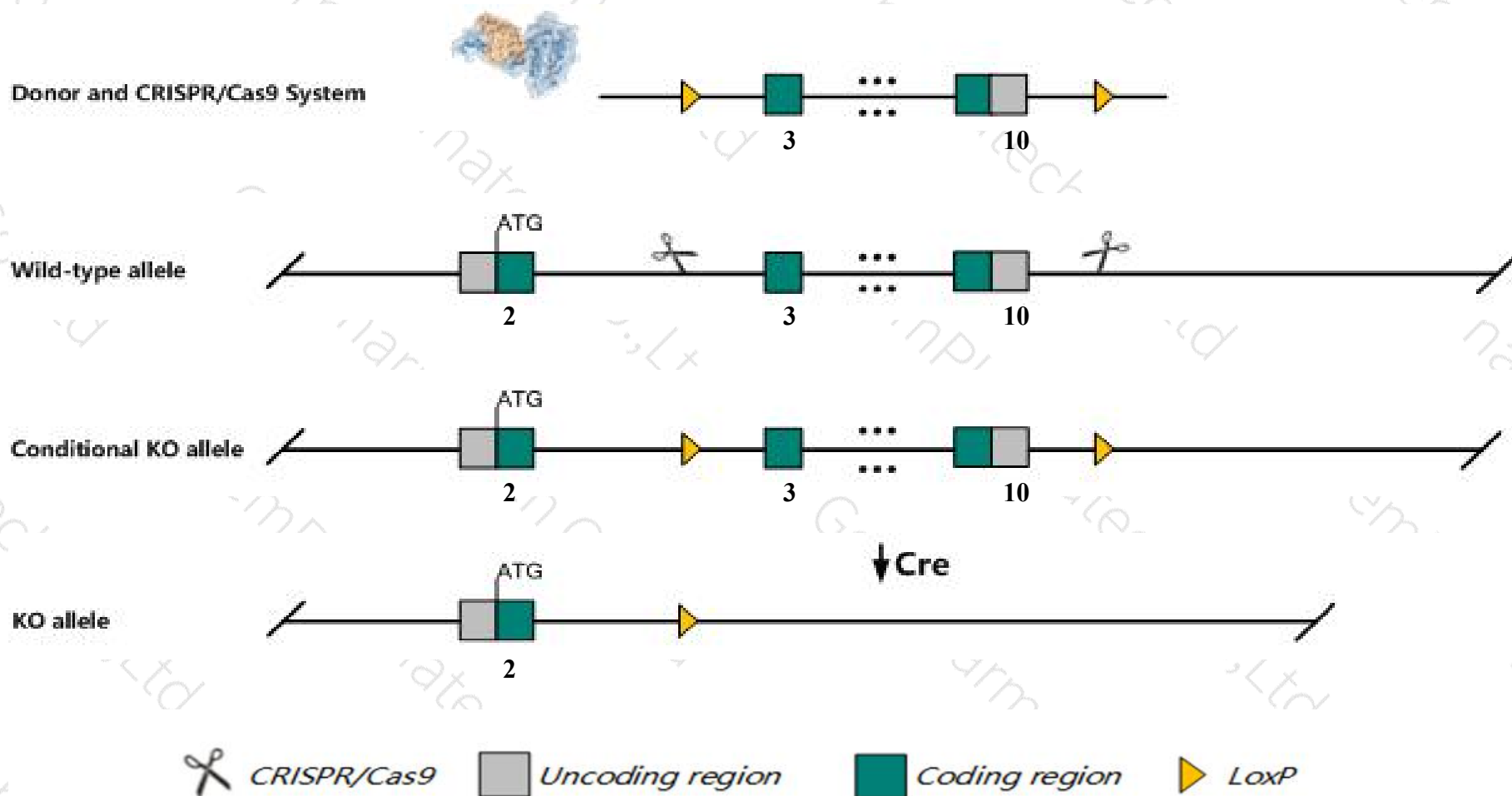
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Btnl9* gene. The schematic diagram is as follows:



- The *Btnl9* gene has 5 transcripts. According to the structure of *Btnl9* gene, exon3-exon10 of *Btnl9-201* (ENSMUST00000046522.12) transcript is recommended as the knockout region. The region contains most coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Btnl9* 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 *Btnl9* gene is located on the Chr11. 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)

Btnl9 butyrophilin-like 9 [*Mus musculus* (house mouse)]

Gene ID: 237754, updated on 12-Aug-2019

Summary

Official Symbol	Btnl9 provided by MGI
Official Full Name	butyrophilin-like 9 provided by MGI
Primary source	MGI:MGI:2442439
See related	Ensembl:ENSMUSG00000040283
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	Btn3; B430208I01; D330012D11Rik
Expression	Biased expression in adrenal adult (RPKM 12.4), subcutaneous fat pad adult (RPKM 11.8) and 9 other tissues See more
Orthologs	human all

Genomic context

Location: 11; 11 B1.2

Exon count: 10

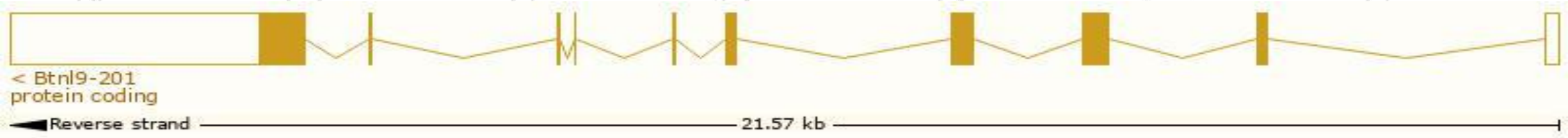
See Btnl9 in [Genome Data Viewer](#)

Transcript information (Ensembl)

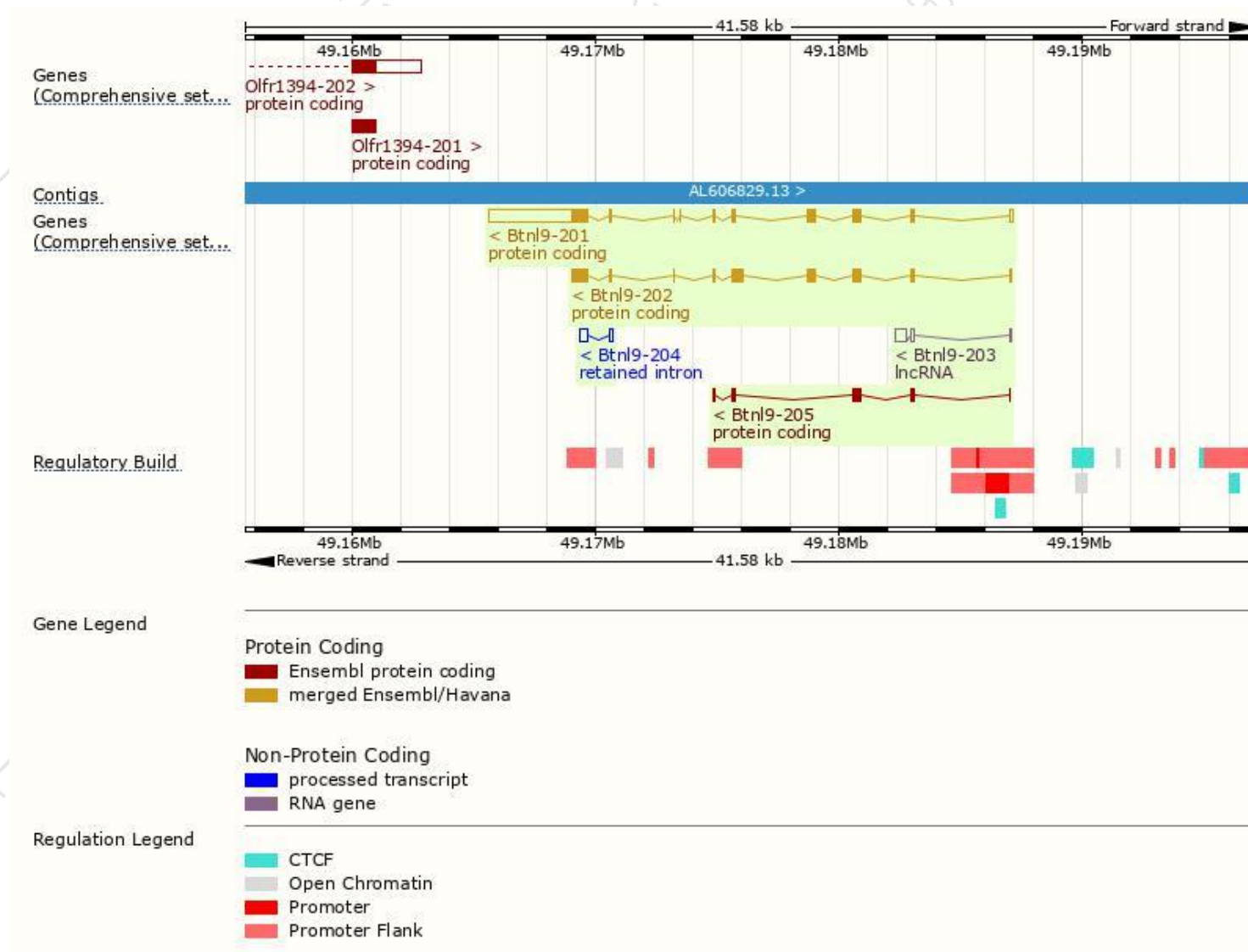
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Btnl9-201	ENSMUST00000046522.12	5273	536aa	Protein coding	CCDS24600	Q8BJE2	TSL:1 GENCODE basic APPRIS P2
Btnl9-202	ENSMUST00000066531.12	1945	621aa	Protein coding	-	Q8BJE2	TSL:1 GENCODE basic APPRIS ALT2
Btnl9-205	ENSMUST00000153999.2	687	205aa	Protein coding	-	A0A0A0MQJ9	CDS 3' incomplete TSL:5
Btnl9-204	ENSMUST00000131363.1	449	No protein	Retained intron	-	-	TSL:3
Btnl9-203	ENSMUST00000128462.1	633	No protein	lncRNA	-	-	TSL:5

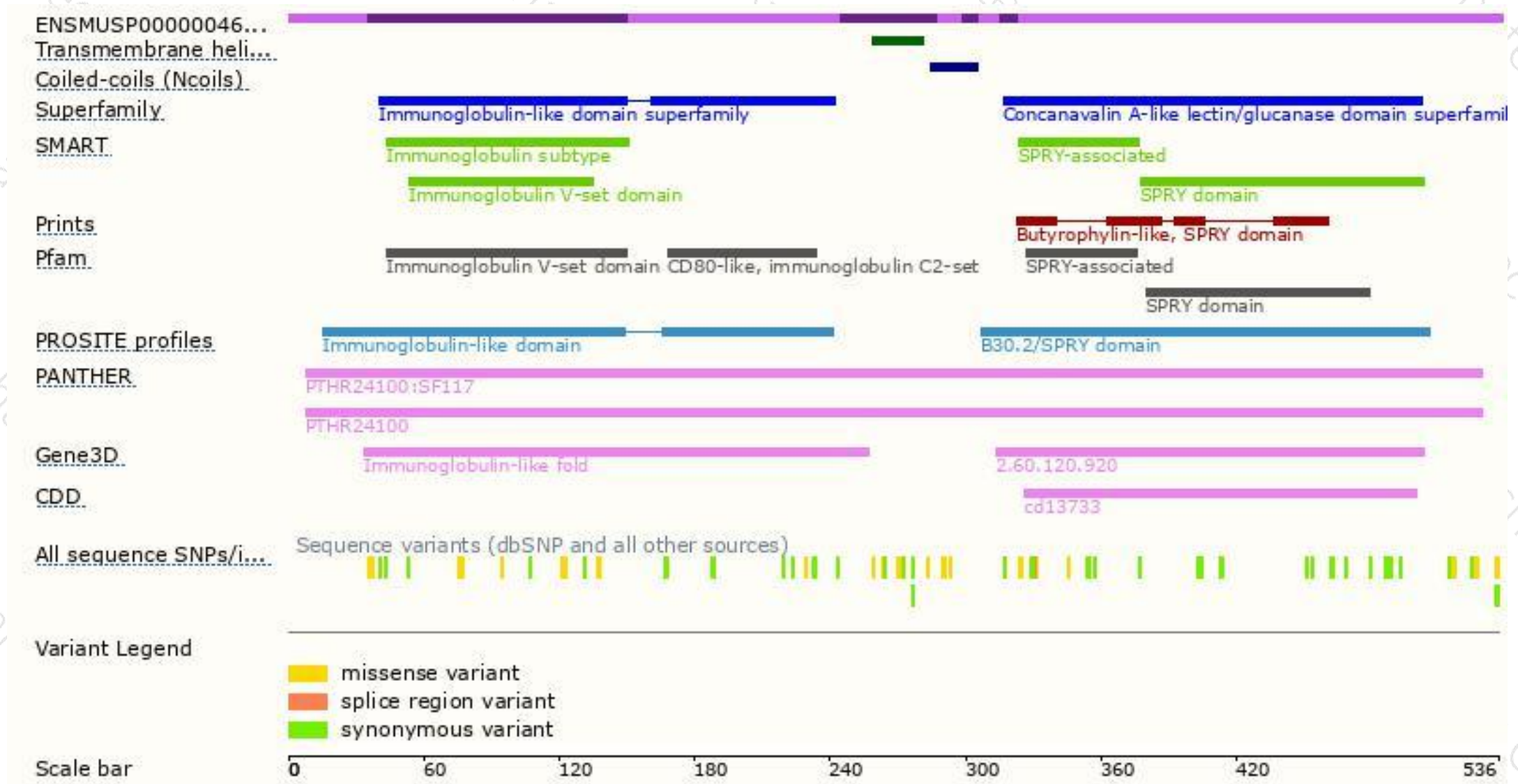
The strategy is based on the design of *Btnl9-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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