

Btnl10 Cas9-CKO Strategy

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Project Overview

Project Name

Btnl10

Project type

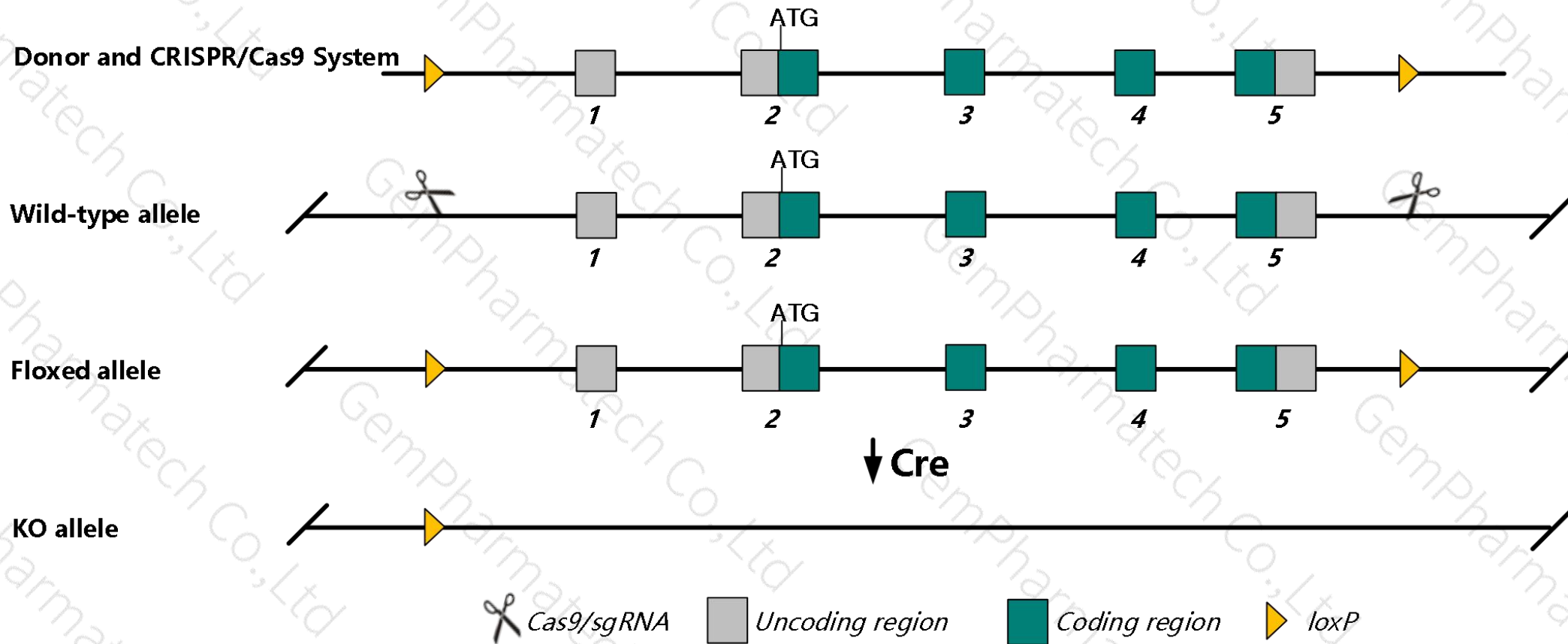
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Btnl10* gene. The schematic diagram is as follows:



- The *Btnl10* gene has 4 transcripts. According to the structure of *Btnl10* gene, exon1-exon5 of *Btnl10-201* (ENSMUST00000020792.11) transcript is recommended as the knockout region. The region contains all 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 *Btnl10* 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 *Btnl10* 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)

Btnl10 butyrophilin-like 10 [*Mus musculus* (house mouse)]

Gene ID: 192194, updated on 24-Oct-2019

Summary

Official Symbol	Btnl10 provided by MGI
Official Full Name	butyrophilin-like 10 provided by MGI
Primary source	MGI:MGI:2182073
See related	Ensembl:ENSMUSG00000020490
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	Butr1; BUTR-1
Expression	Biased expression in liver E14.5 (RPKM 10.9), liver E14 (RPKM 9.9) and 3 other tissues See more
Orthologs	human all

Genomic context

Location: 11; 11 B1.3

Exon count: 10

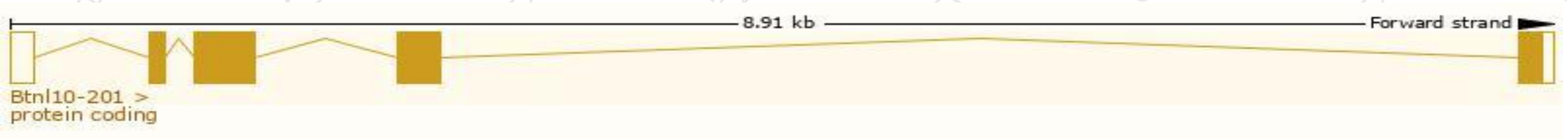
See Btnl10 in [Genome Data Viewer](#)

Transcript information (Ensembl)

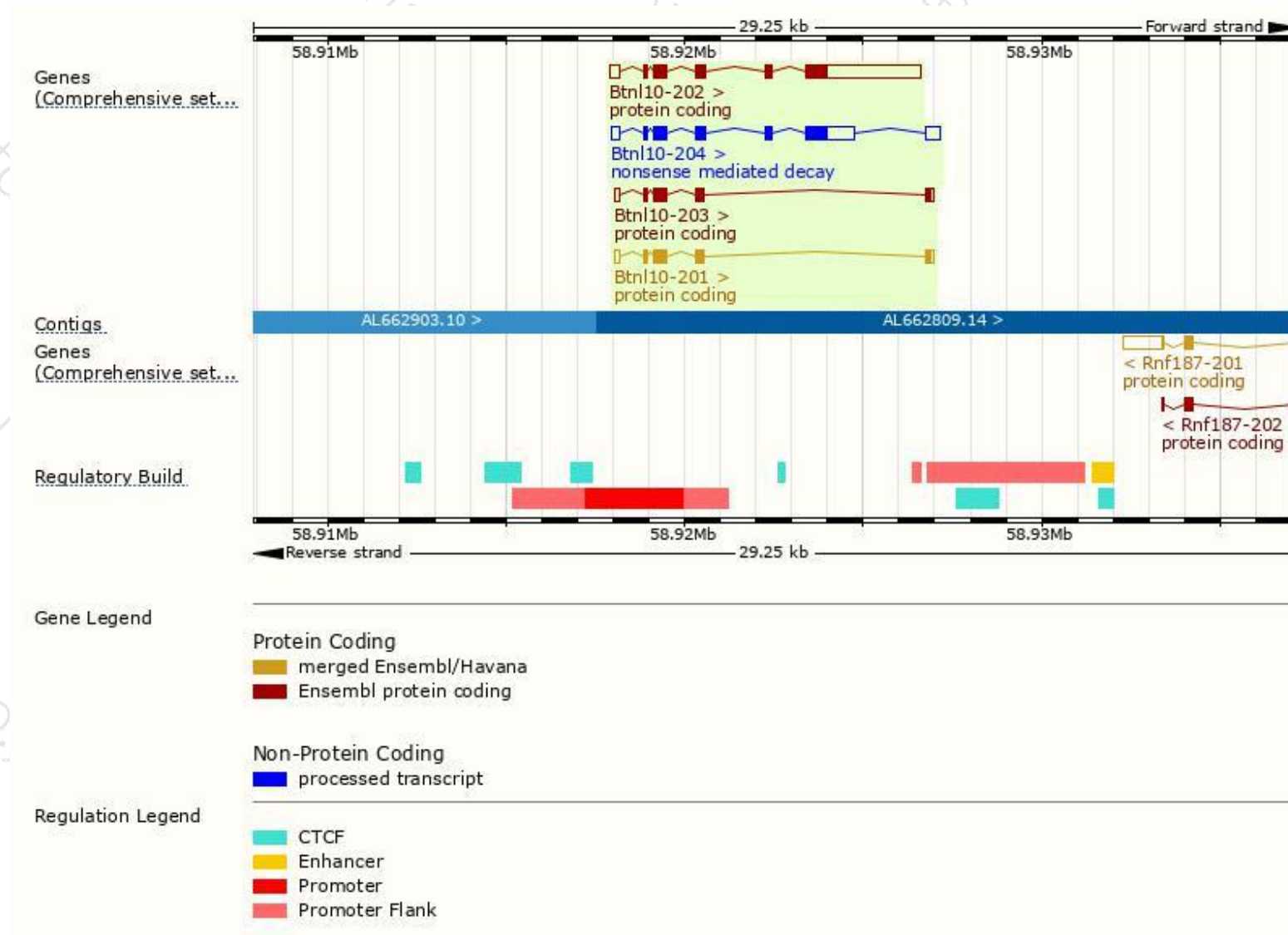
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Btnl10-201	ENSMUST00000020792.11	1028	275aa	Protein coding	CCDS24753	Q9JK39	TSL:5 GENCODE basic
Btnl10-202	ENSMUST00000069941.12	4400	492aa	Protein coding	-	Q9JK39	TSL:1 GENCODE basic APPRIS P1
Btnl10-203	ENSMUST00000108818.3	1028	275aa	Protein coding	-	A0A0R4J1C6	TSL:1 GENCODE basic
Btnl10-204	ENSMUST00000142499.7	2915	492aa	Nonsense mediated decay	-	Q9JK39	TSL:5

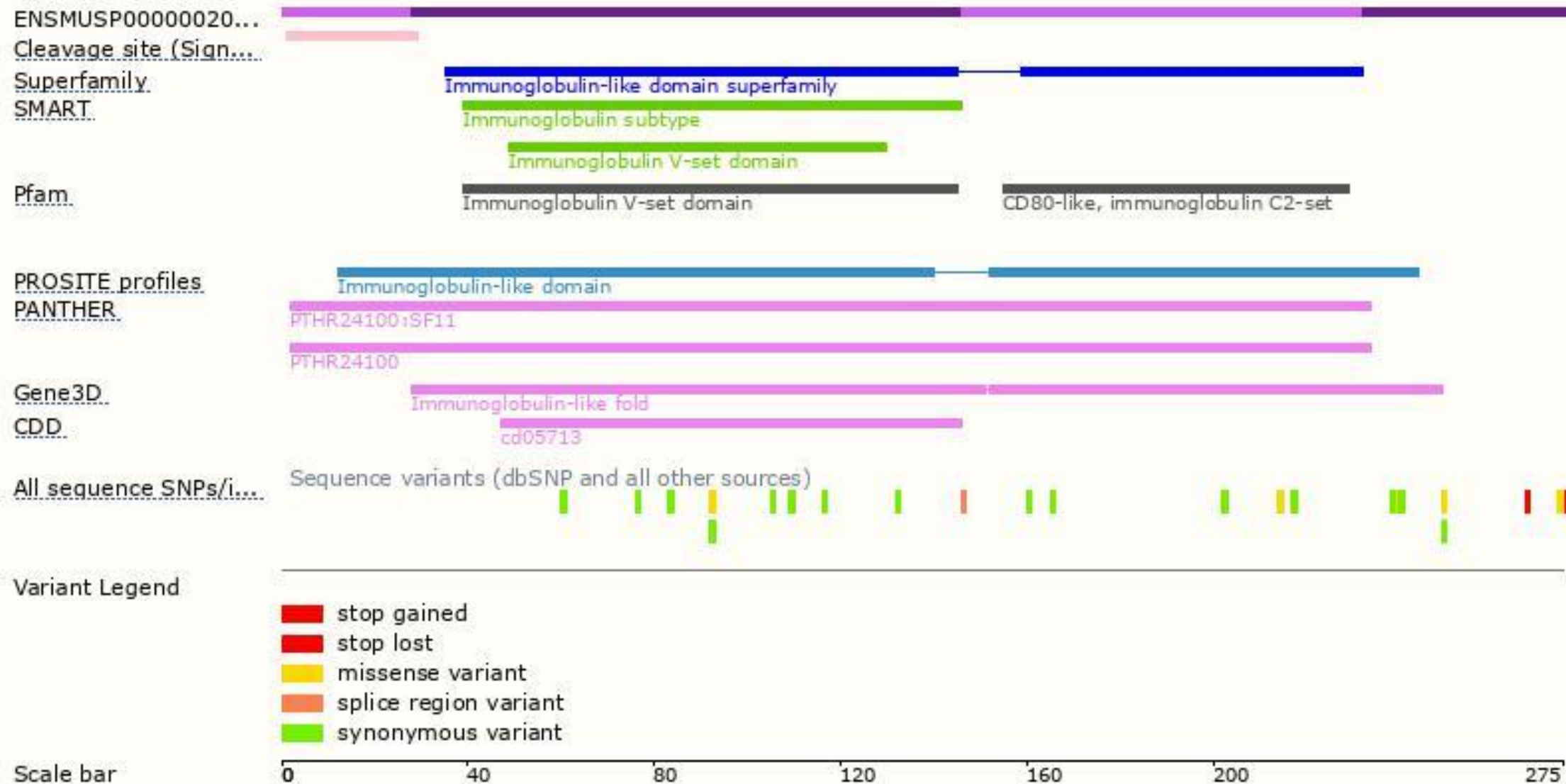
The strategy is based on the design of *Btnl10-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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