

***Bcl9l* Cas9-CKO Strategy**

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Project Overview

Project Name

Bcl9l

Project type

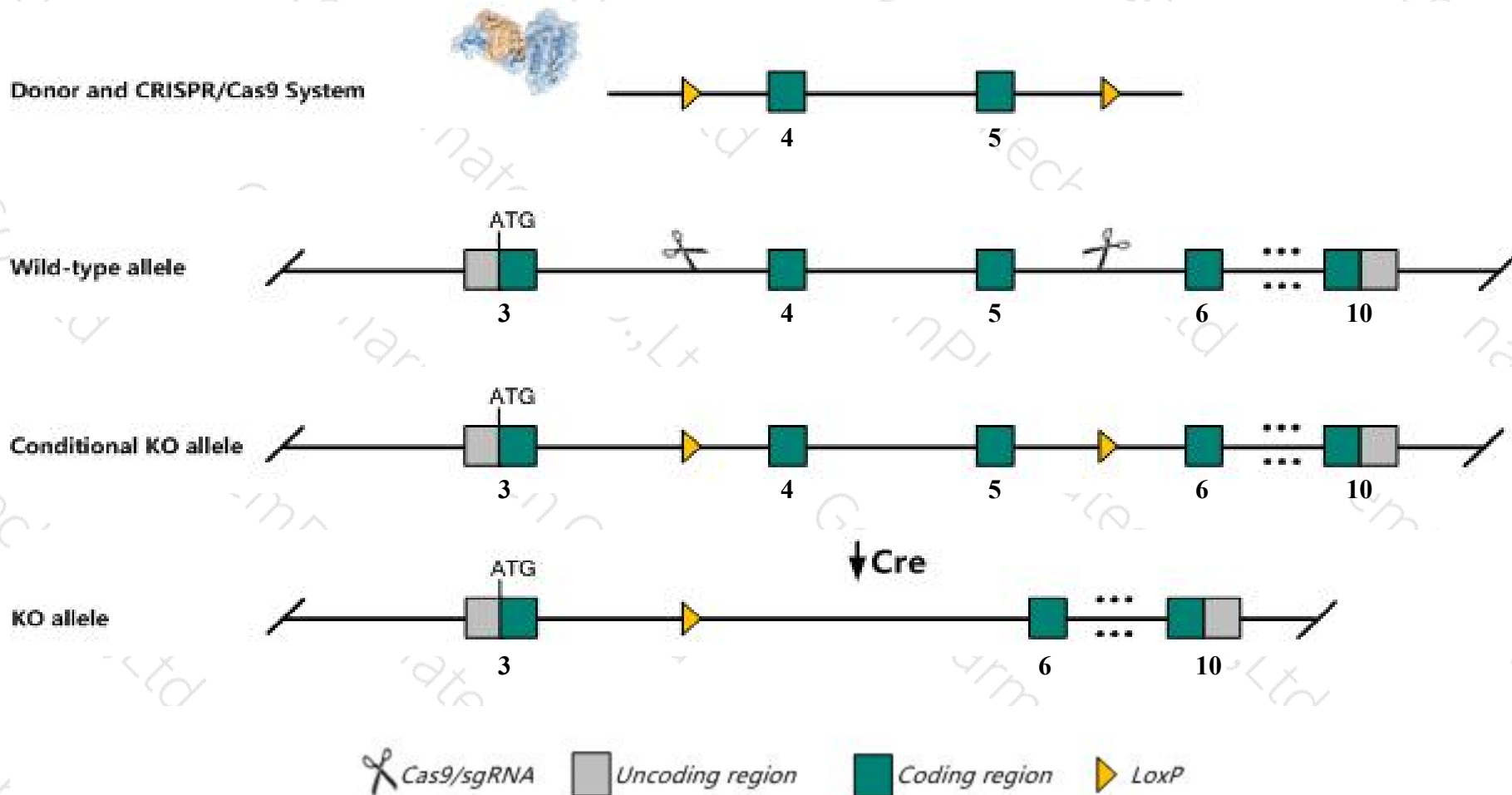
Cas9-CKO

Strain background

C57BL/6J

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Bcl9l* gene. The schematic diagram is as follows:



Technical routes

- The *Bcl9l* gene has 6 transcripts. According to the structure of *Bcl9l* gene, exon4-exon5 of *Bcl9l*-203 (ENSMUST00000218183.1) transcript is recommended as the knockout region. The region contains 506bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Bcl9l* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor were microinjected into the fertilized eggs of C57BL/6J 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/6J 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.

- According to the existing MGI data, Mice carrying homozygous floxed *Bcl9* and *Bcl9l* alleles, inactivated in muscle cells, exhibit impaired muscle regeneration due to increased apoptosis.
- The *Bcl9l* gene is located on the Chr9. 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)

Bcl9l B cell CLL/lymphoma 9-like [*Mus musculus* (house mouse)]

Gene ID: 80288, updated on 24-Oct-2019

Summary

- Official Symbol** Bcl9l provided by [MGI](#)
- Official Full Name** B cell CLL/lymphoma 9-like provided by [MGI](#)
- Primary source** [MGI:MGI:1933114](#)
- See related** [Ensembl:ENSMUSG00000063382](#)
- 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** B9L; BCL9-2; DLNB11; BC003321
- Expression** Ubiquitous expression in mammary gland adult (RPKM 17.6), lung adult (RPKM 16.5) and 26 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 9; 9 A5.2

See Bcl9l in [Genome Data Viewer](#)

Exon count: 13

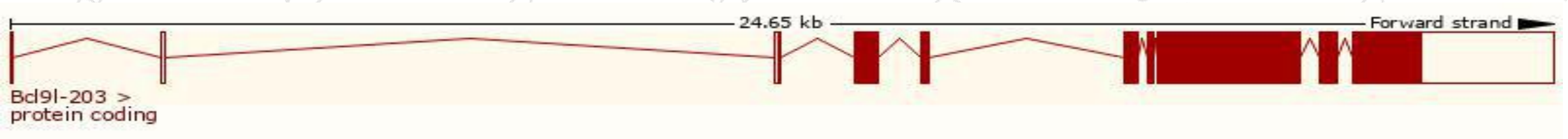
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	9	NC_000075.6 (44482738..44511906)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	9	NC_000075.5 (44307219..44318506)

Transcript information (Ensembl)

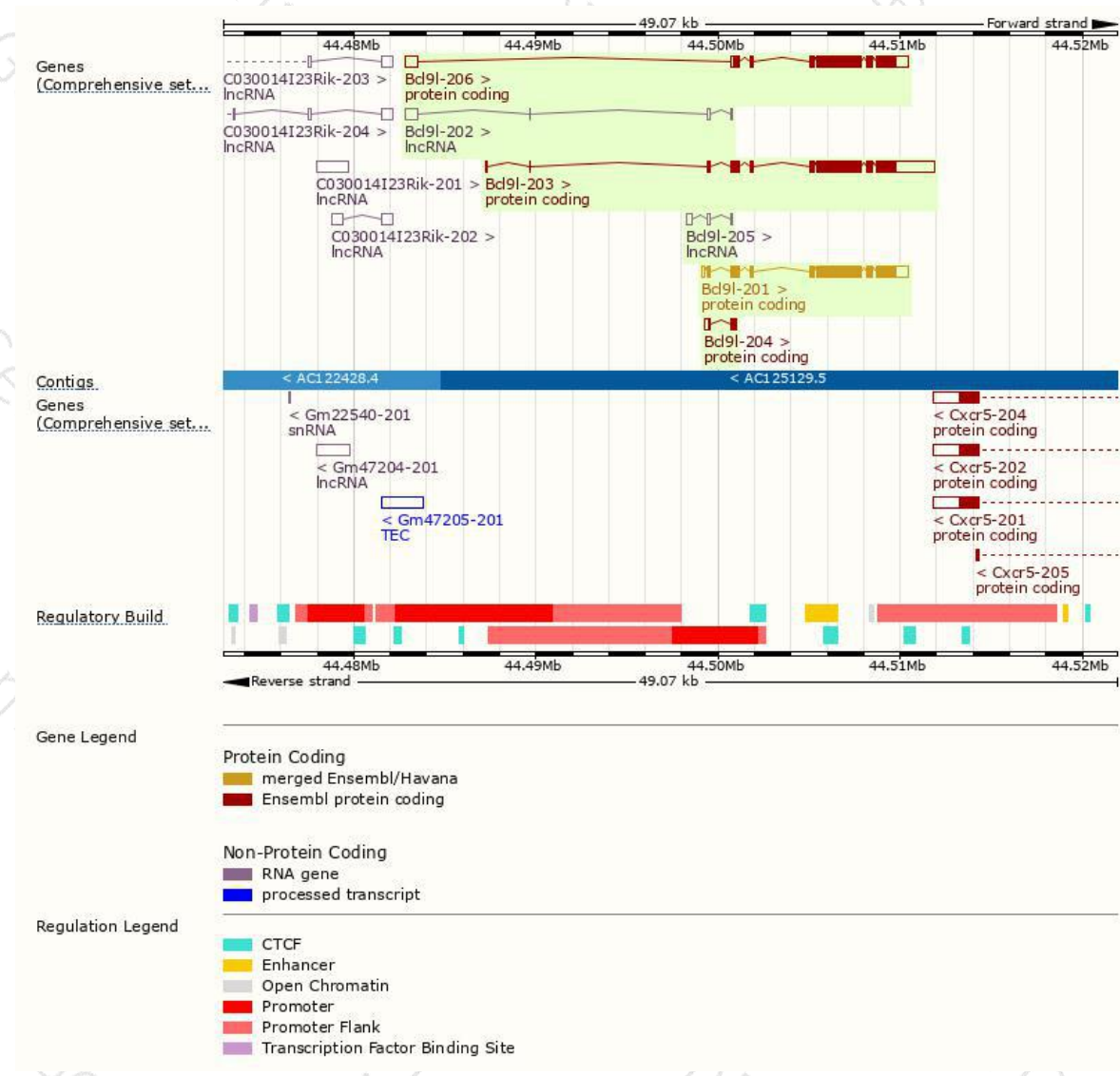
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Bcl9l-203	ENSMUST00000218183.1	6771	1494aa	Protein coding	CCDS40601	Q67FY2	TSL:5 GENCODE basic APPRIS P2
Bcl9l-201	ENSMUST00000074989.6	5339	1494aa	Protein coding	CCDS40601	Q67FY2	TSL:1 GENCODE basic APPRIS P2
Bcl9l-206	ENSMUST00000220303.1	5760	1457aa	Protein coding	-	Q67FY2	TSL:1 GENCODE basic APPRIS ALT2
Bcl9l-204	ENSMUST00000218913.1	522	90aa	Protein coding	-	A0A1W2P7G4	CDS 3' incomplete TSL:3
Bcl9l-202	ENSMUST00000217898.1	836	No protein	lncRNA	-	-	TSL:5
Bcl9l-205	ENSMUST00000220292.1	419	No protein	lncRNA	-	-	TSL:3

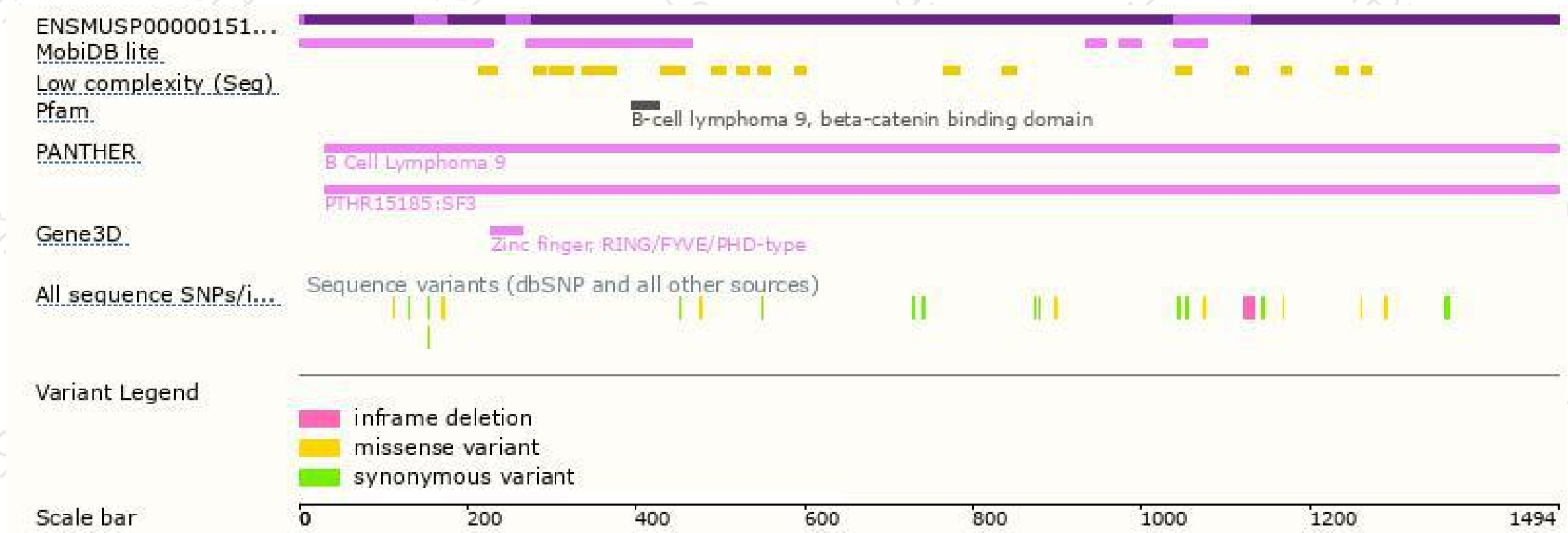
The strategy is based on the design of *Bcl9l-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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