

Bcl7b Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Bcl7b

Project type

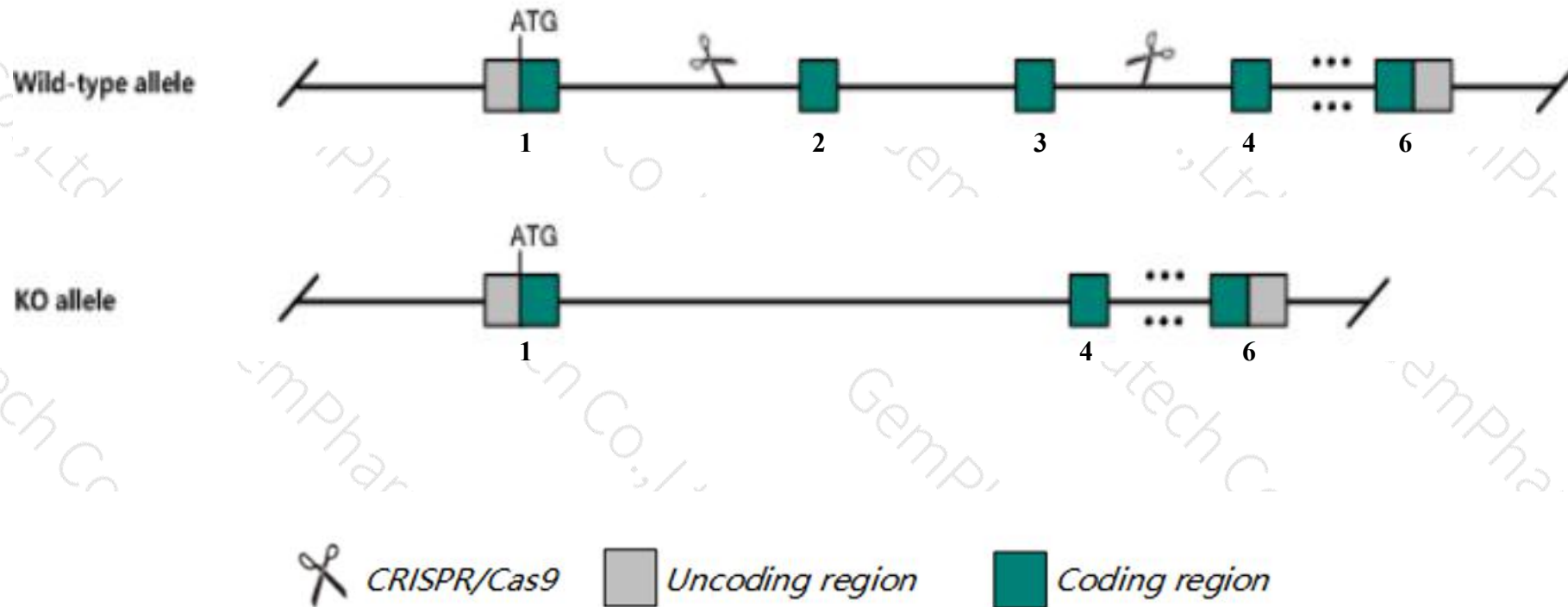
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Bcl7b* gene. The schematic diagram is as follows:



- The *Bcl7b* gene has 5 transcripts. According to the structure of *Bcl7b* gene, exon2-exon3 of *Bcl7b-201* (ENSMUST00000031692.11) transcript is recommended as the knockout region. The region contains 173bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Bcl7b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation are viable with no gross developmental, motor coordination, or memory formation abnormalities.
- The *Bcl7b* gene is located on the Chr5. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Bcl7b B cell CLL/lymphoma 7B [Mus musculus (house mouse)]

Gene ID: 12054, updated on 13-Mar-2020

Summary

Official Symbol Bcl7b provided by [MGI](#)

Official Full Name B cell CLL/lymphoma 7B provided by [MGI](#)

Primary source [MGI:MGI:1332238](#)

See related [Ensembl:ENSMUSG00000029681](#)

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

Expression Ubiquitous expression in adrenal adult (RPKM 22.4), thymus adult (RPKM 17.3) and 28 other tissues [See more](#)

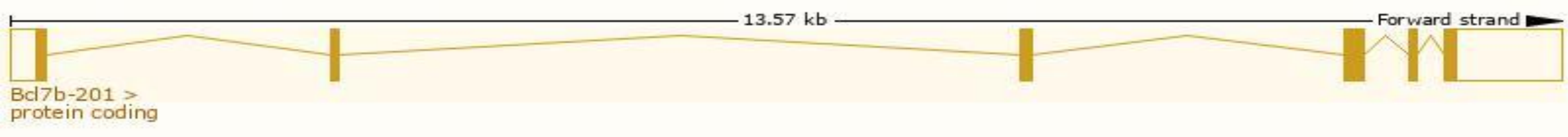
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

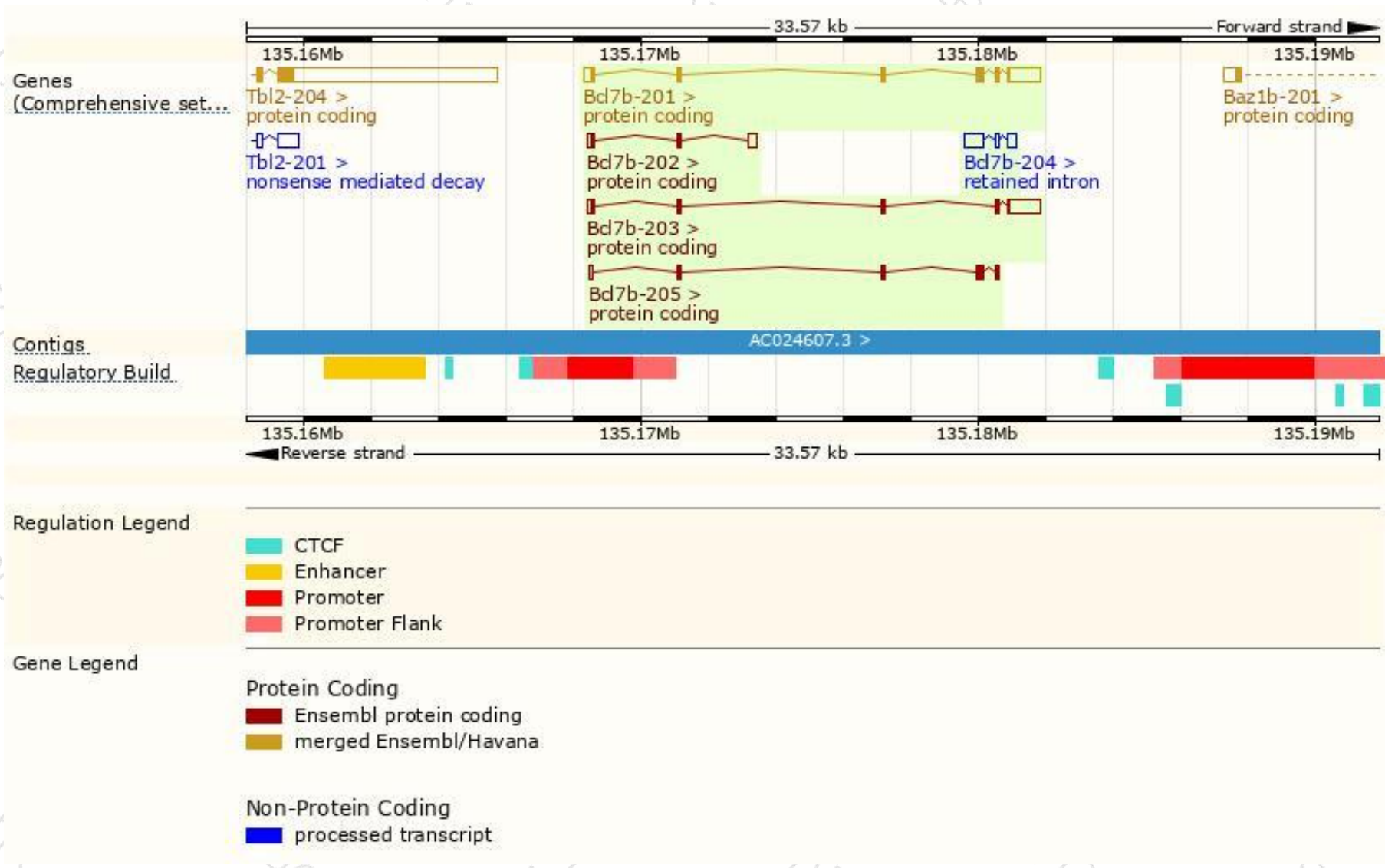
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Bcl7b-201	ENSMUST00000031692.11	1758	202aa	Protein coding	CCDS51660	Q921K9	TSL:1 GENCODE basic APPRIS P1
Bcl7b-203	ENSMUST00000111188.4	1434	145aa	Protein coding	-	D3YYL1	TSL:5 GENCODE basic
Bcl7b-202	ENSMUST00000111187.9	564	58aa	Protein coding	-	Q921K9	TSL:1 GENCODE basic
Bcl7b-205	ENSMUST00000202606.2	546	146aa	Protein coding	-	A0A0J9YV82	CDS 3' incomplete TSL:5
Bcl7b-204	ENSMUST00000145329.1	907	No protein	Retained intron	-	-	TSL:2

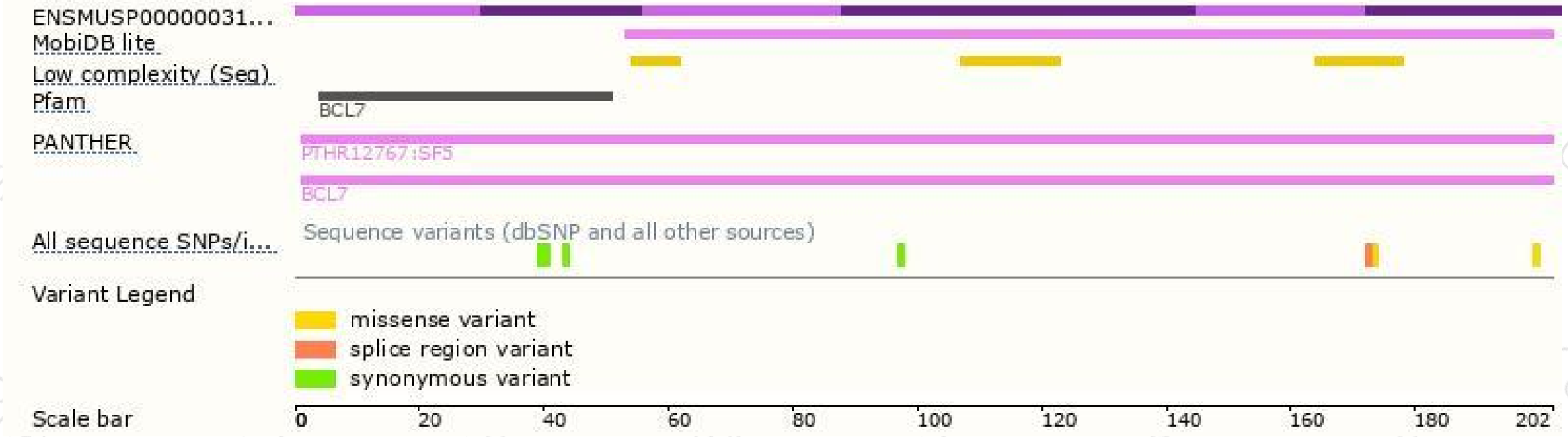
The strategy is based on the design of *Bcl7b-201* transcript,The transcription is shown below



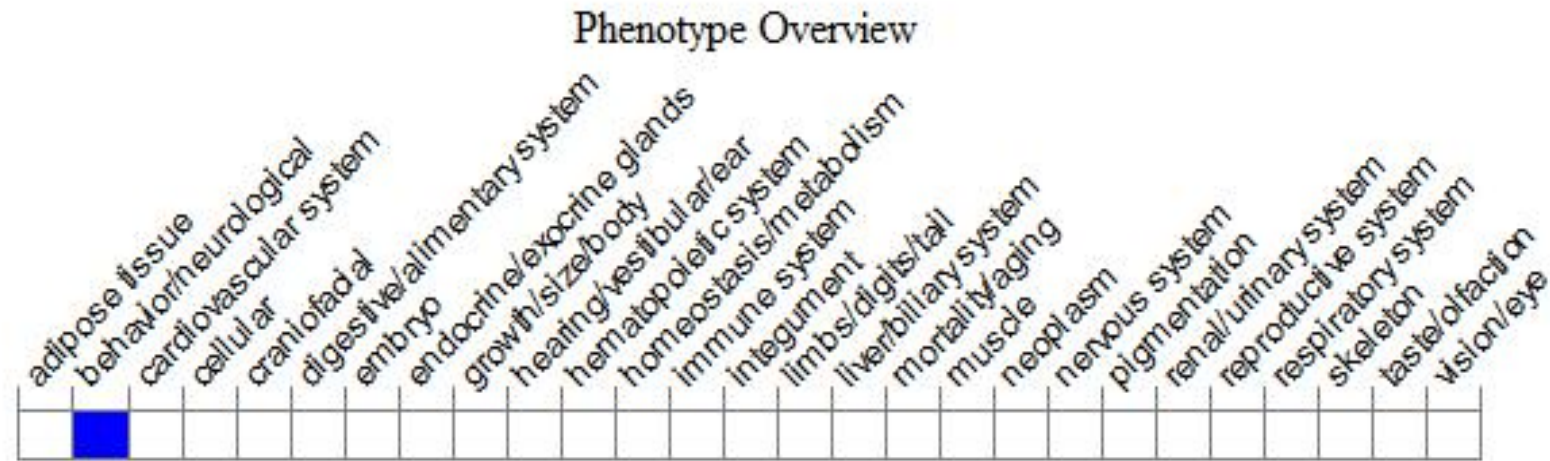
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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