

Klrb1 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Klrbl

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Klrb1* gene. The schematic diagram is as follows:



- The *Klrbl* gene has 2 transcripts. According to the structure of *Klrbl* gene, exon2-exon5 of *Klrbl*-201 (ENSMUST00000112110.3) transcript is recommended as the knockout region. The region contains 436bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Klrbl* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, This locus encodes a NK cell specific antigen. Four RFLP patterns differing among inbred strains have been identified in reference J:12581.
- The *Klrbl* gene is located on the Chr6. 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)

Klrb1 killer cell lectin-like receptor subfamily B member 1 [Mus musculus (house mouse)]

Gene ID: 100043861, updated on 19-Mar-2019

Summary



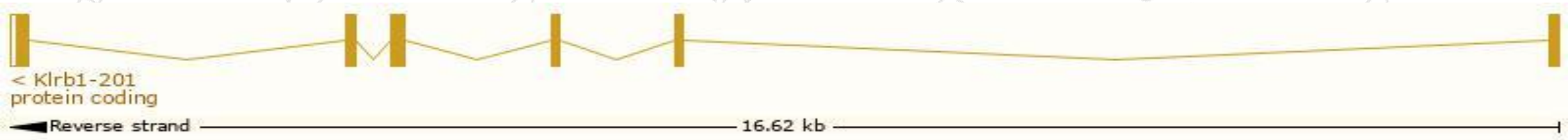
Official Symbol	Klrb1 provided by MGI
Official Full Name	killer cell lectin-like receptor subfamily B member 1 provided by MGI
Primary source	MGI:MGI:96877
See related	Ensembl:ENSMUSG00000079299
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930431A04Rik, Gm4696, Klrb1g, Klrb6, Ly-55, Ly55, NKR-P1G, Nkrp-1e, Nkrp1g
Expression	Restricted expression toward testis adult (RPKM 6.8) See more

Transcript information (Ensembl)

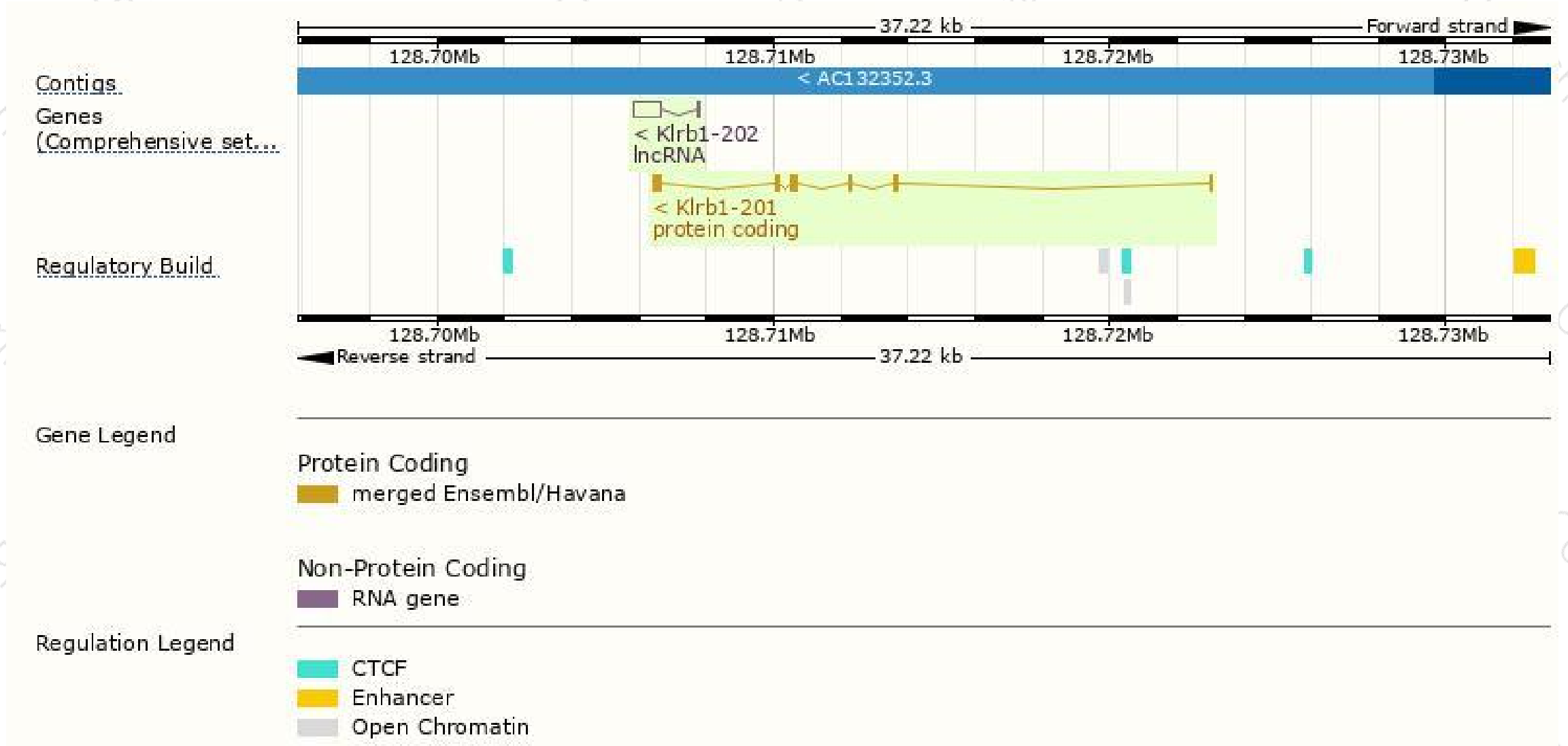
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Klrb1-201	ENSMUST00000112110.3	724	214aa	Protein coding	CCDS39653	A0A1U9W1A8 Q0ZUP1	TSL:1 GENCODE basic APPRIS P1
Klrb1-202	ENSMUST00000203869.1	870	No protein	lncRNA	-	-	TSL:1

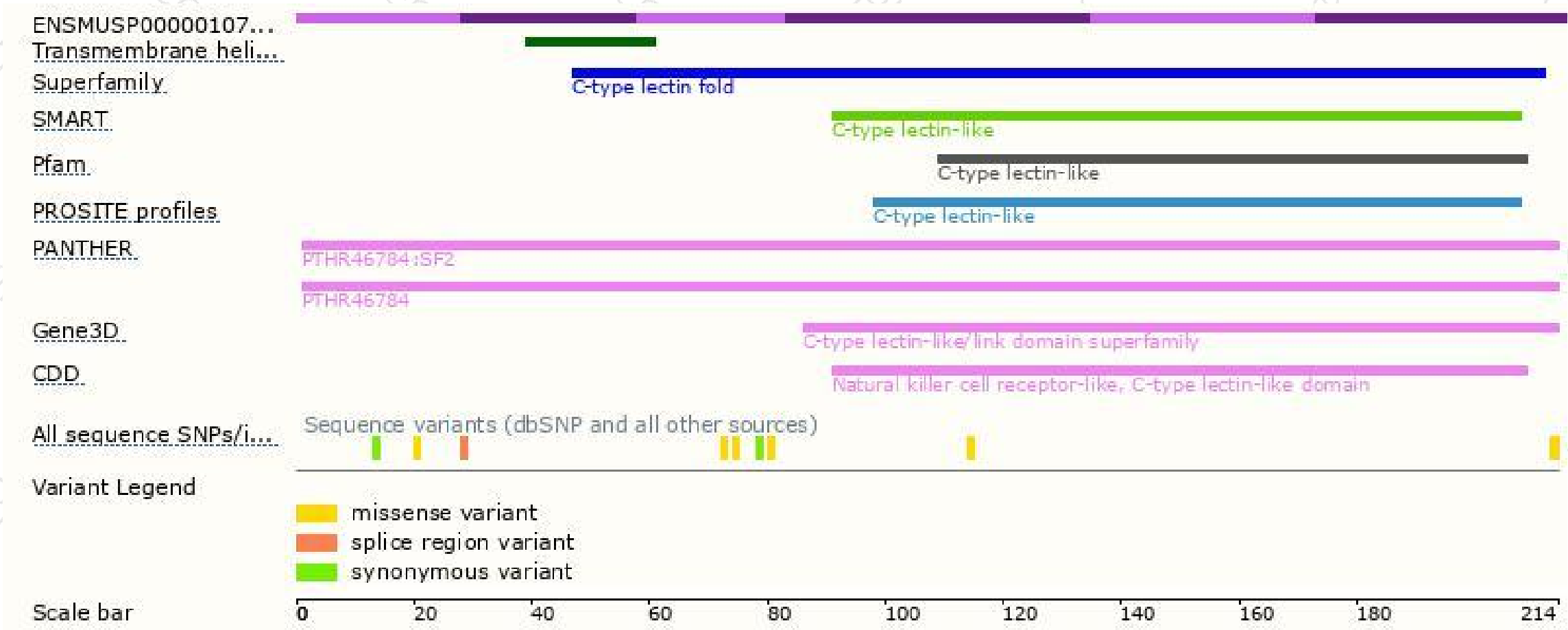
The strategy is based on the design of *Klrb1-201* transcript,The transcription is shown below



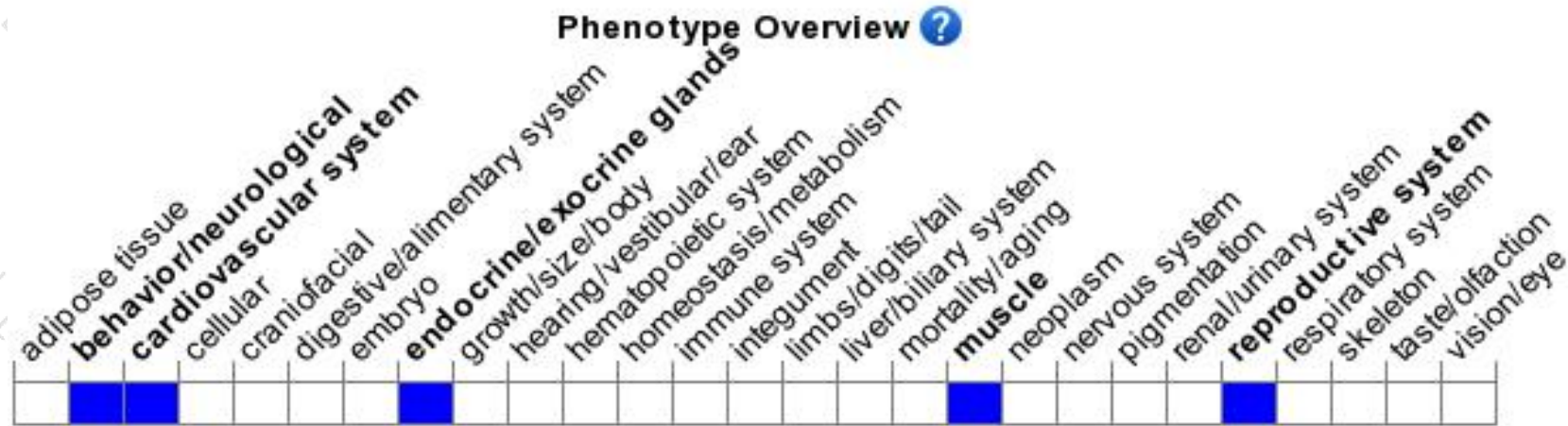
Genomic location distribution



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/>).

According to the existing MGI data, This locus encodes a NK cell specific antigen. Four RFLP patterns differing among inbred strains have been identified in reference J:12581.

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

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