

Il31 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

IL31

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Il31* gene. The schematic diagram is as follows:



- The *Il31* gene has 4 transcripts. According to the structure of *Il31* gene, exon3 of *Il31-201* (ENSMUST00000031389.11) transcript is recommended as the knockout region. The region contains 324bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Il31* gene. The brief process is as follows: gRNA was transcribed in vitro. Cas9 and gRNA 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 *Il31* 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)

Il31 interleukin 31 [*Mus musculus* (house mouse)]

Gene ID: 76399, updated on 12-Aug-2019

Summary



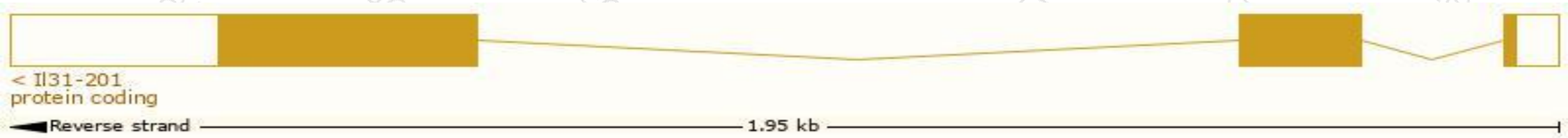
Official Symbol	Il31 provided by MGI
Official Full Name	interleukin 31 provided by MGI
Primary source	MGI:MGI:1923649
See related	Ensembl:ENSMUSG00000029437
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1700013B14Rik
Expression	Restricted expression toward testis adult (RPKM 17.4) See more
Orthologs	human all

Transcript information (Ensembl)

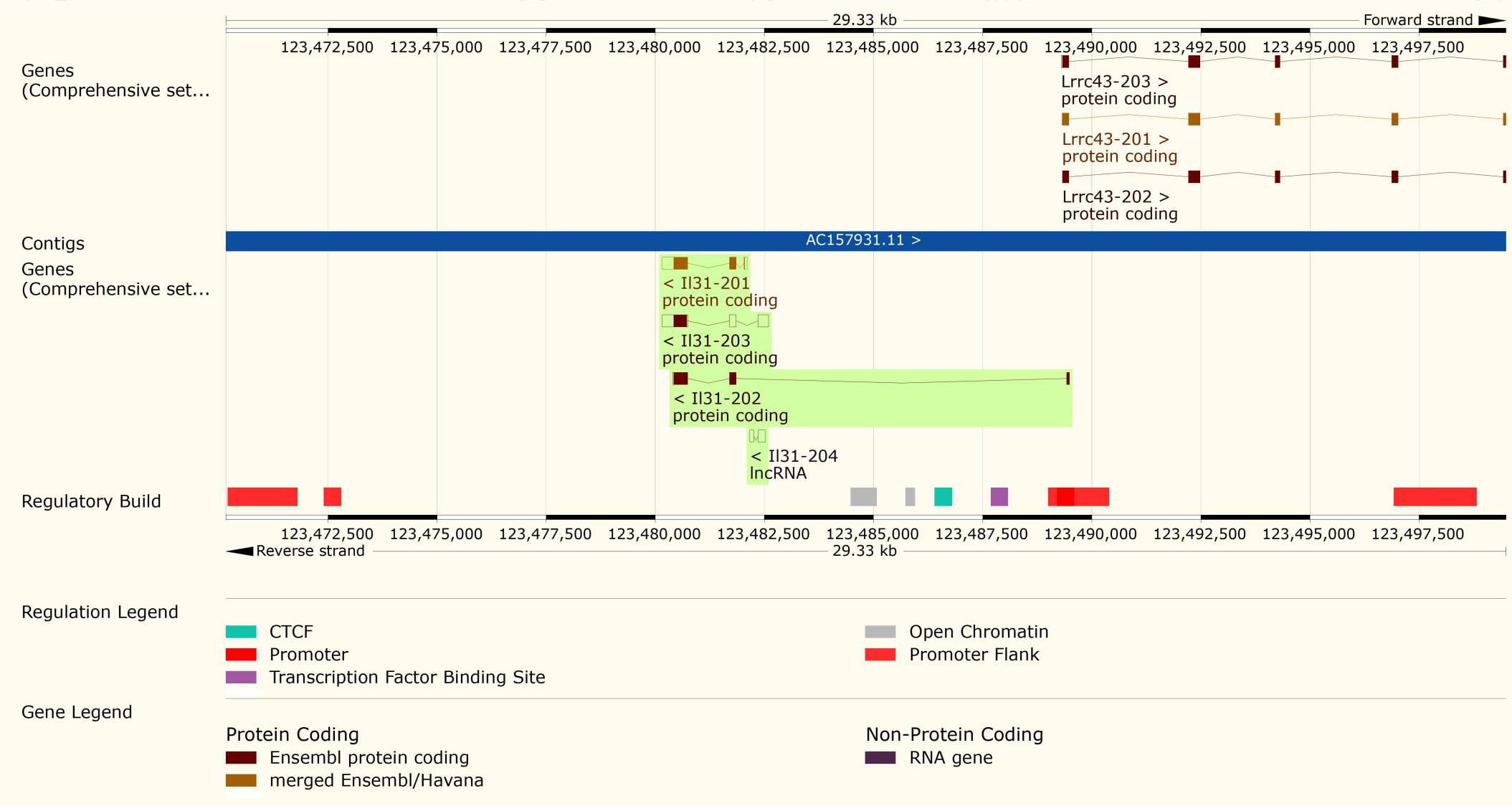
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
II31-201	ENSMUST00000031389.11	806	163aa	Protein coding	CCDS51645	Q6EAL8	TSL:1 GENCODE basic APPRIS P1
II31-203	ENSMUST00000198901.1	984	100aa	Protein coding	-	Q9DAD2	TSL:1 GENCODE basic
II31-202	ENSMUST00000198463.1	558	179aa	Protein coding	-	A0A0G2JDU6	CDS 5' incomplete TSL:3
II31-204	ENSMUST00000199227.1	267	No protein	Processed transcript	-	-	TSL:3

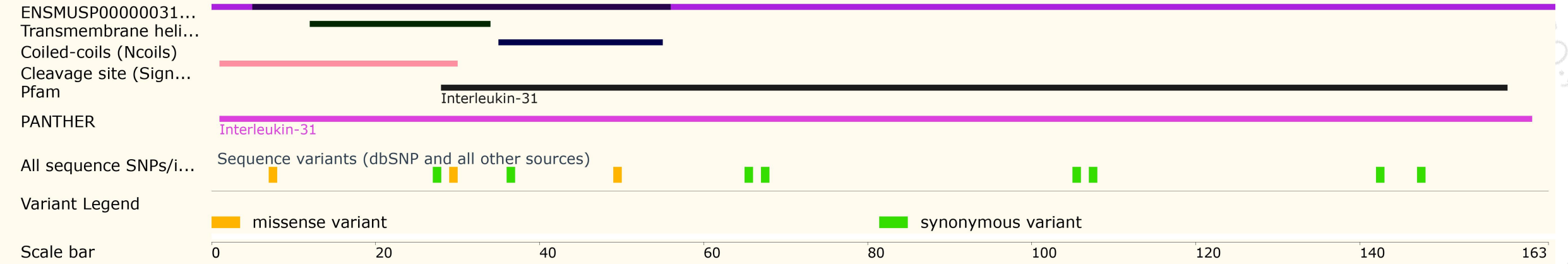
The strategy is based on the design of *II31-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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