

Clca1 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Clca1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Clca1* gene. The schematic diagram is as follows:



- The *Clca1* gene has 3 transcripts. According to the structure of *Clca1* gene, exon2-exon12 of *Clca1-201* (ENSMUST00000029919.6) transcript is recommended as the knockout region. The region contains 1954bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Clca1* gene. The brief process is as follows: CRISPR/Cas9 system w

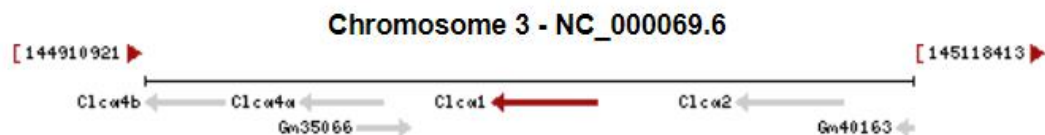
- According to the existing MGI data, Mice homozygous for a null allele exhibit an exacerbated mucin response.
- The *Clca1* gene is located on the Chr3. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the 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.

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GemPharmatech

Gene ID: 23844, updated on 12-Aug-2019

⬆️ ?

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

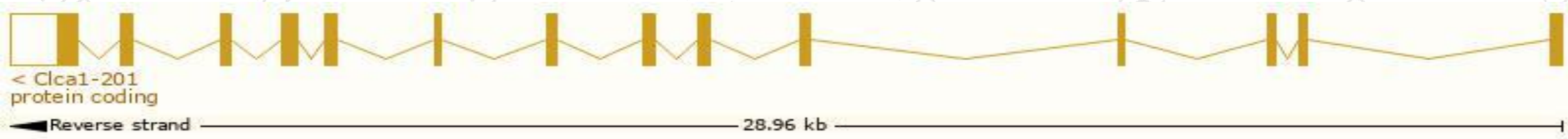


Transcript information (Ensembl)

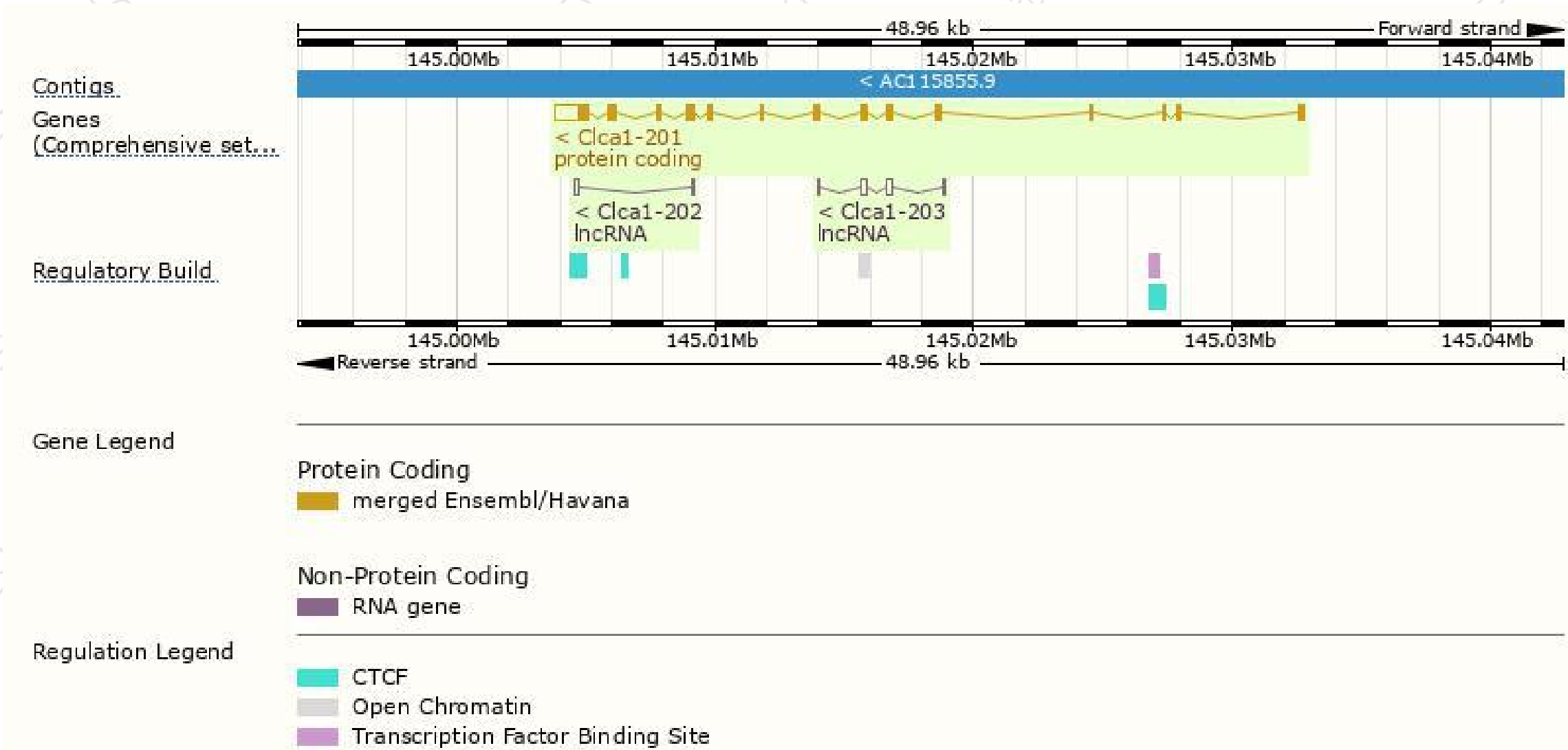
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Clca1-201	ENSMUST00000029919.6	3655	913aa	ENSMUSP00000029919.5	Protein coding	CCDS17889	Q9D7Z6	TSL:1 GENCODE basic APPRIS P1
Clca1-203	ENSMUST00000198832.1	629	No protein	-	lncRNA	-	-	TSL:3
Clca1-202	ENSMUST00000195901.1	261	No protein	-	lncRNA	-	-	TSL:3

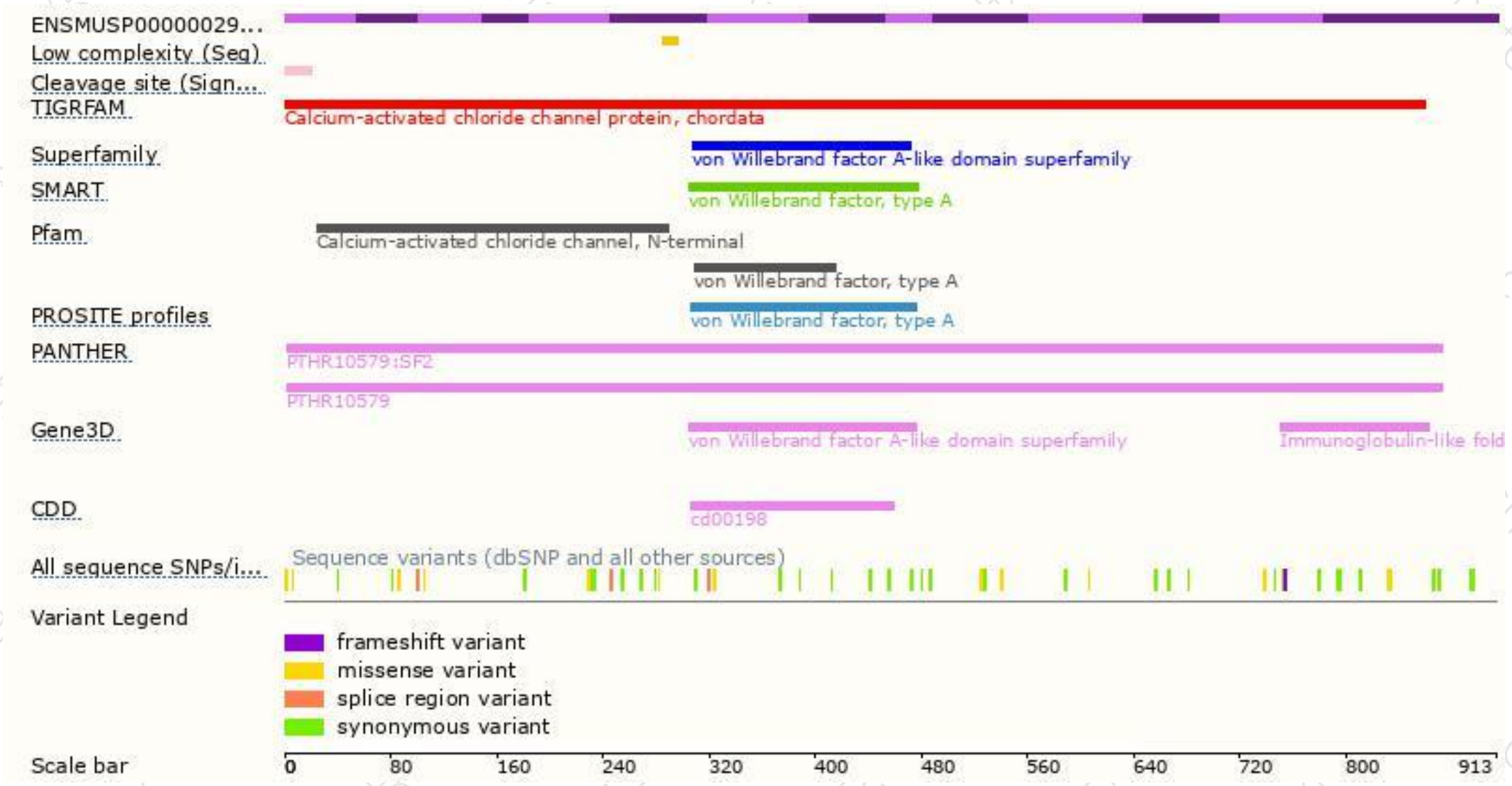
The strategy is based on the design of *Clca1-201* transcript,The transcription is shown below



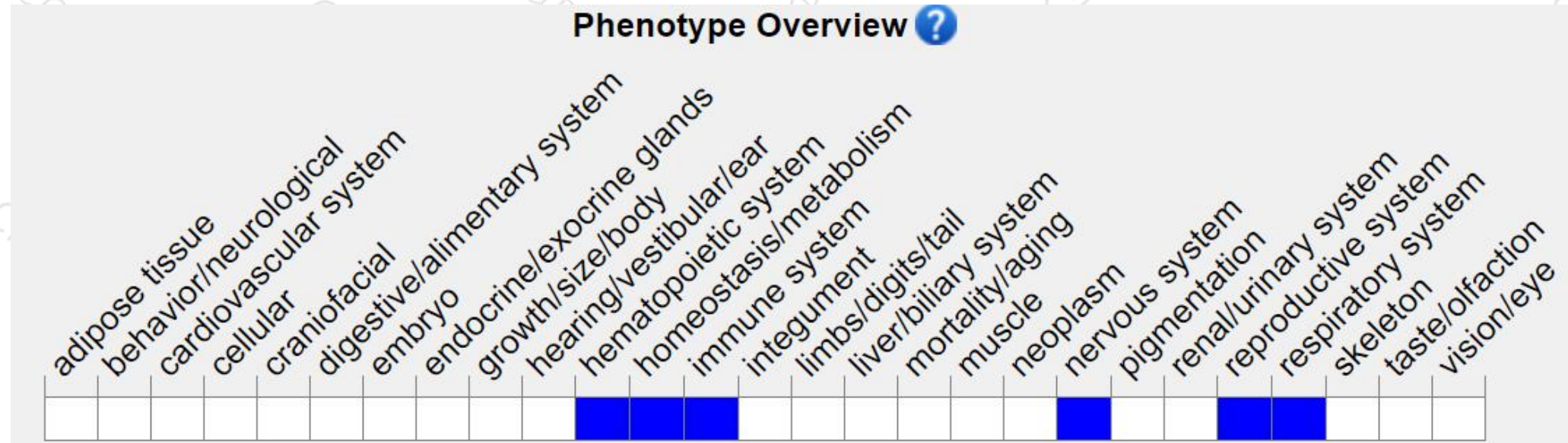
Genomic location distribution



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, Mice homozygous for a null allele exhibit an exacerbated mucin response.

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

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