

Cysltr2 Cas9-KO Strategy

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Project Overview

Project Name

Cysltr2

Project type

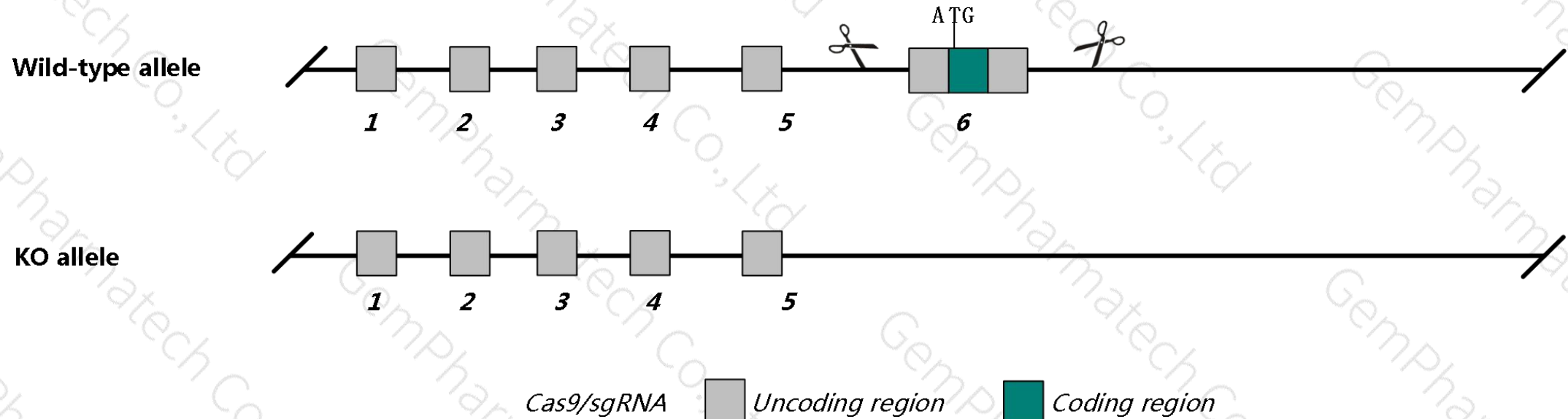
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cysltr2* gene. The schematic diagram is as follows:



- The *Cysltr2* gene has 5 transcripts. According to the structure of *Cysltr2* gene, exon6 of *Cysltr2-201* (ENSMUST00000044664.11) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cysltr2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- According to the existing MGI data, Homozygous null mice display reduced bleomycin-induced pulmonary fibrosis and reduced IgE dependent passive cutaneous anaphylaxis.
- The *Cysltr2* gene is located on the Chr14. 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)

Cysltr2 cysteinyl leukotriene receptor 2 [Mus musculus (house mouse)]

Gene ID: 70086, updated on 31-Jan-2019

Summary



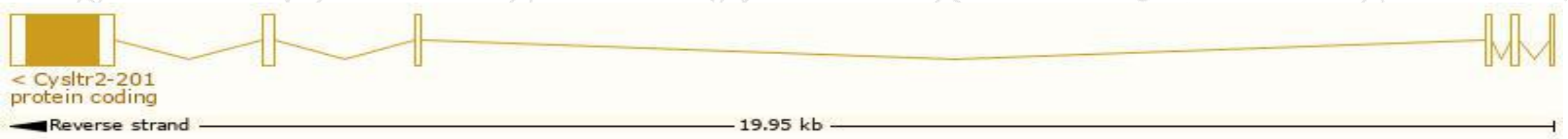
Official Symbol	Cysltr2 provided by MGI
Official Full Name	cysteinyl leukotriene receptor 2 provided by MGI
Primary source	MGI:MGI:1917336
See related	Ensembl:ENSMUSG00000033470
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2300001H05Rik, CYSLT2R, Cltr2, Cysl2
Expression	Broad expression in thymus adult (RPKM 1.4), spleen adult (RPKM 0.4) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

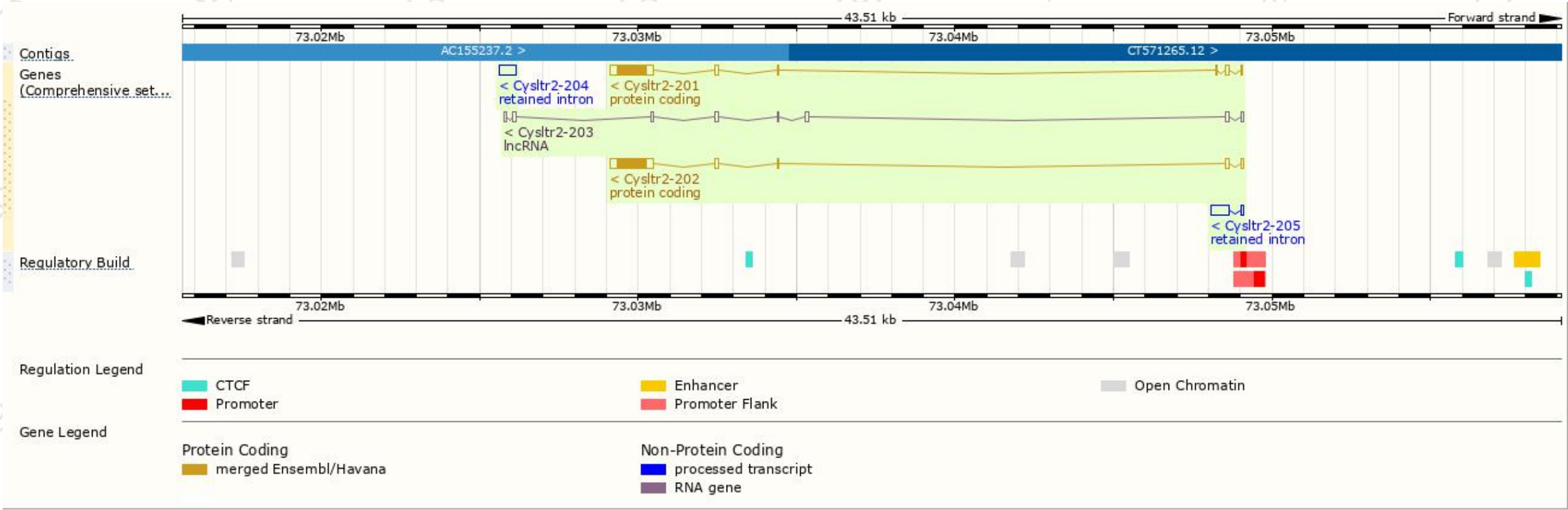
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cysltr2-201	ENSMUST00000044664.11	1760	309aa	Protein coding	CCDS27265	Q920A1	TSL:1 GENCODE basic APPRIS P1
Cysltr2-202	ENSMUST00000169168.2	1744	309aa	Protein coding	CCDS27265	Q920A1	TSL:1 GENCODE basic APPRIS P1
Cysltr2-203	ENSMUST00000226727.1	737	No protein	Processed transcript	-	-	
Cysltr2-205	ENSMUST00000228821.1	650	No protein	Retained intron	-	-	
Cysltr2-204	ENSMUST00000228154.1	557	No protein	Retained intron	-	-	

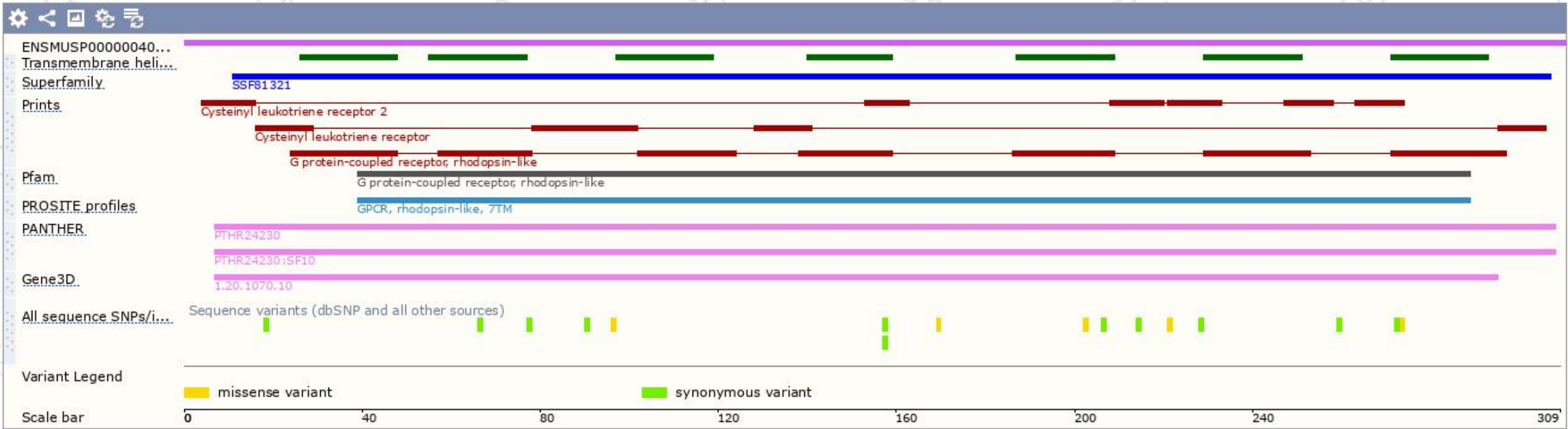
The strategy is based on the design of *Cysltr2-201* transcript,The transcription is shown below



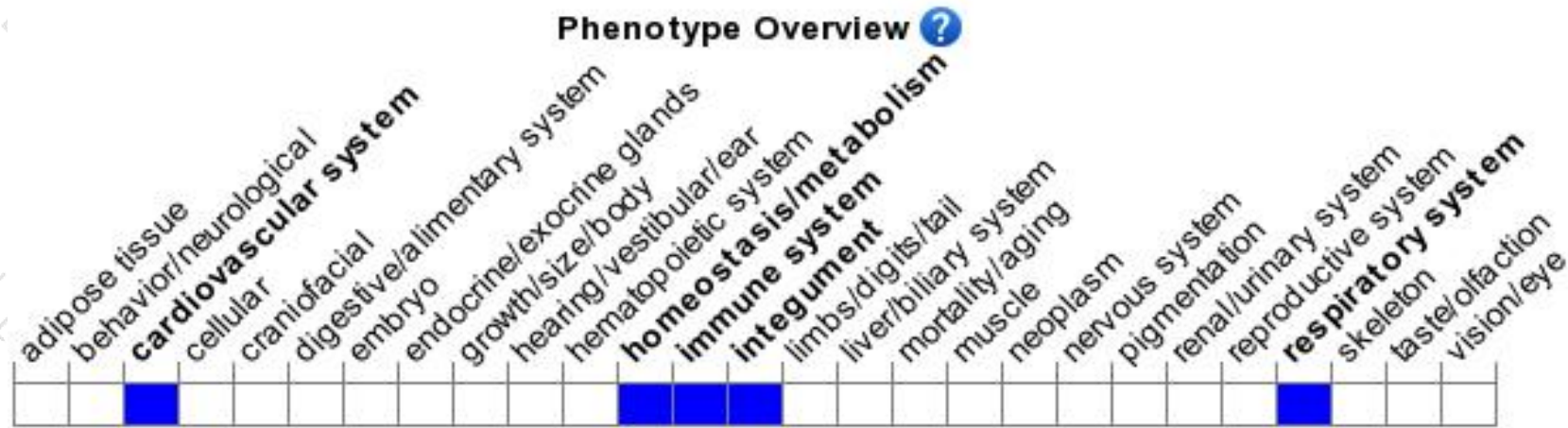
Genomic location distribution



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, Homozygous null mice display reduced bleomycin-induced pulmonary fibrosis and reduced IgE dependent passive cutaneous anaphylaxis.

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

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