

# *Ccl22* Cas9-KO Strategy

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**Reviewer:**

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**Design Date:**

**2019-11-26**

# Project Overview

**Project Name**

*Ccl22*

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccl22* gene. The schematic diagram is as follows:



- The *Ccl22* gene has 2 transcripts. According to the structure of *Ccl22* gene, exon2 of *Ccl22-201* (ENSMUST00000034231.3) transcript is recommended as the knockout region. The region contains 124bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ccl22* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice homozygous for a knock out allele exhibit dendritic cell physiology relating to CCR4-mediated cell contacts between dendritic cells and cytotoxic T cells.
- The *Ccl22* gene is located on the Chr8. 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.



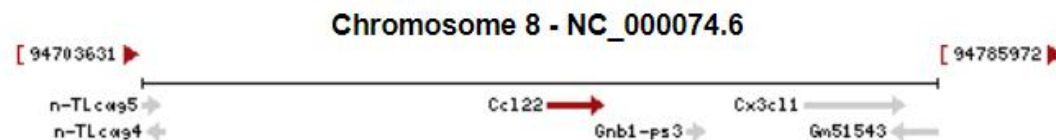
# Gene information (NCBI)

## Ccl22 chemokine (C-C motif) ligand 22 [ *Mus musculus* (house mouse) ]

Gene ID: 20299, updated on 10-Oct-2019

### Summary

<b>Official Symbol</b>	Ccl22 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	chemokine (C-C motif) ligand 22 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1306779</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000031779</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	MDC; DCBCK; ABCD-1; Scya22
<b>Expression</b>	Biased expression in thymus adult (RPKM 44.5), mammary gland adult (RPKM 25.2) and 5 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

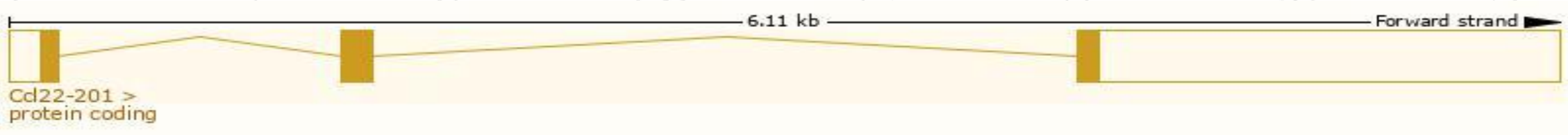


# Transcript information (Ensembl)

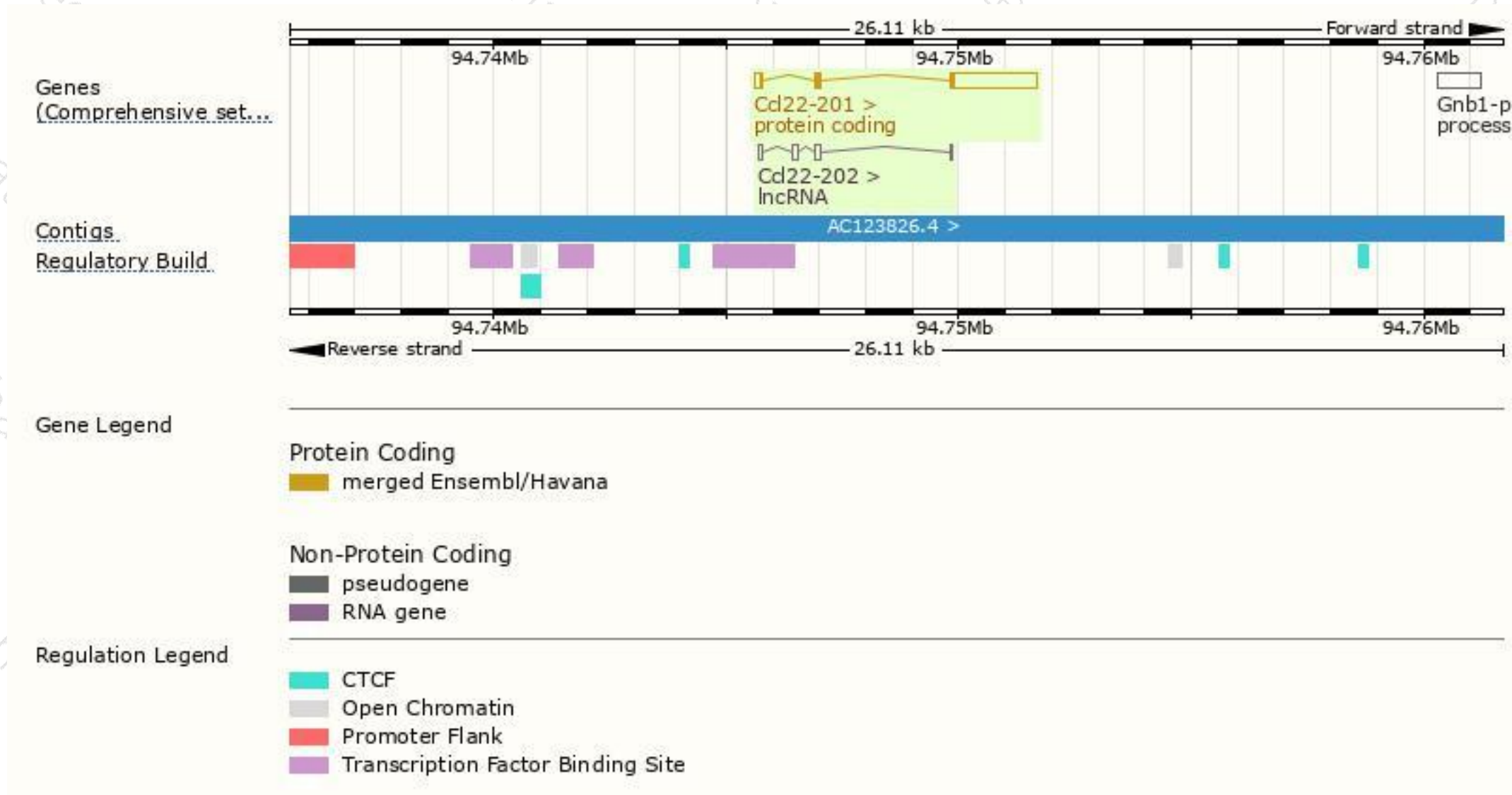
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Ccl22-201	<a href="#">ENSMUST00000034231.3</a>	2216	<a href="#">92aa</a>	<a href="#">ENSMUSP00000034231.3</a>	Protein coding	<a href="#">CCDS40441</a>	<a href="#">O88430</a> <a href="#">Q546S6</a>	TSL:1 GENCODE basic APPRIS P1
Ccl22-202	<a href="#">ENSMUST00000156137.1</a>	409	No protein	-	lncRNA	-	-	TSL:3

The strategy is based on the design of *Ccl22-201* transcript,The transcription is shown below

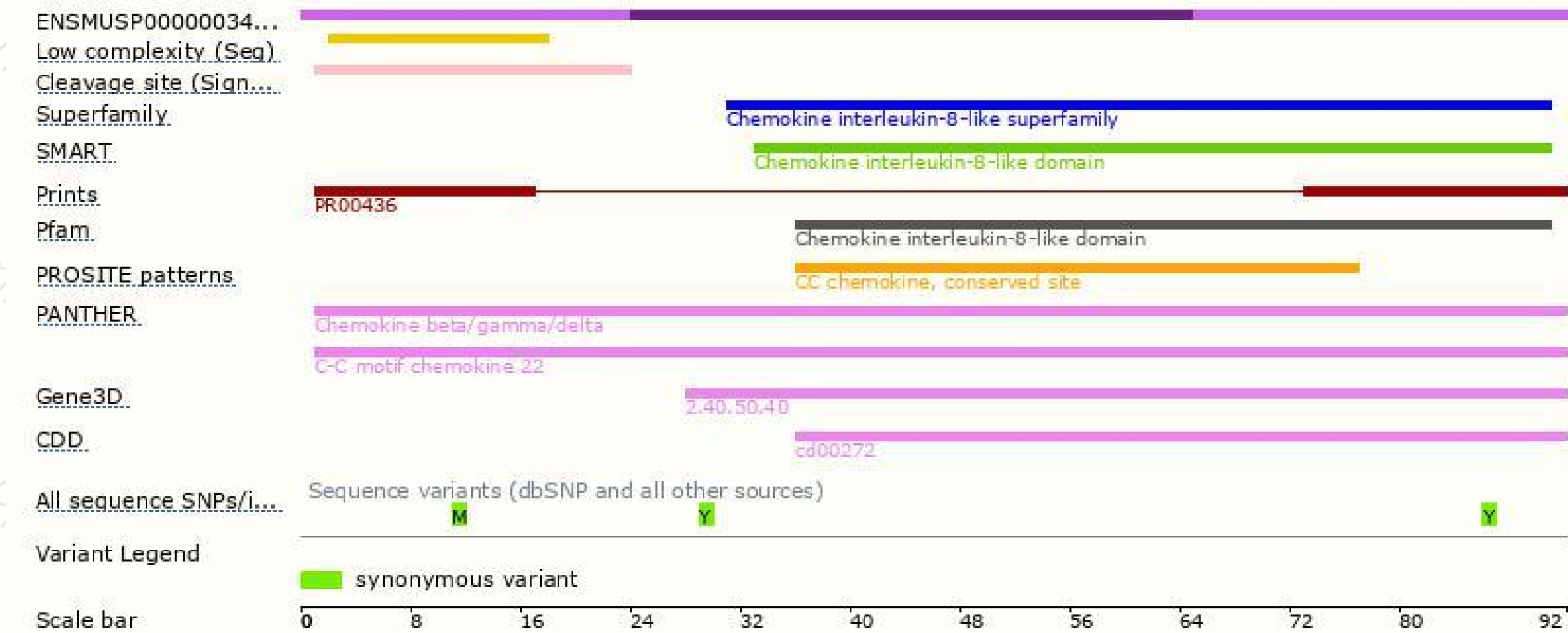


# Genomic location distribution



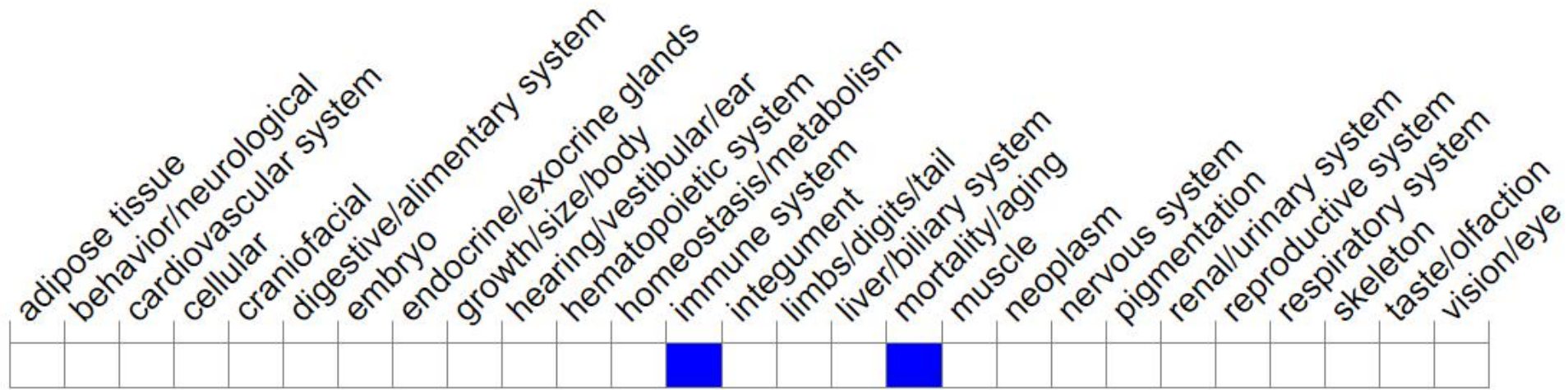


# Protein domain



# Mouse phenotype description(MGI)

## Phenotype Overview ?



*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 knock out allele exhibit dendritic cell physiology relating to CCR4-mediated cell contacts between dendritic cells and cytotoxic T cells.

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

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