Ccl24 Cas9-CKO Strategy

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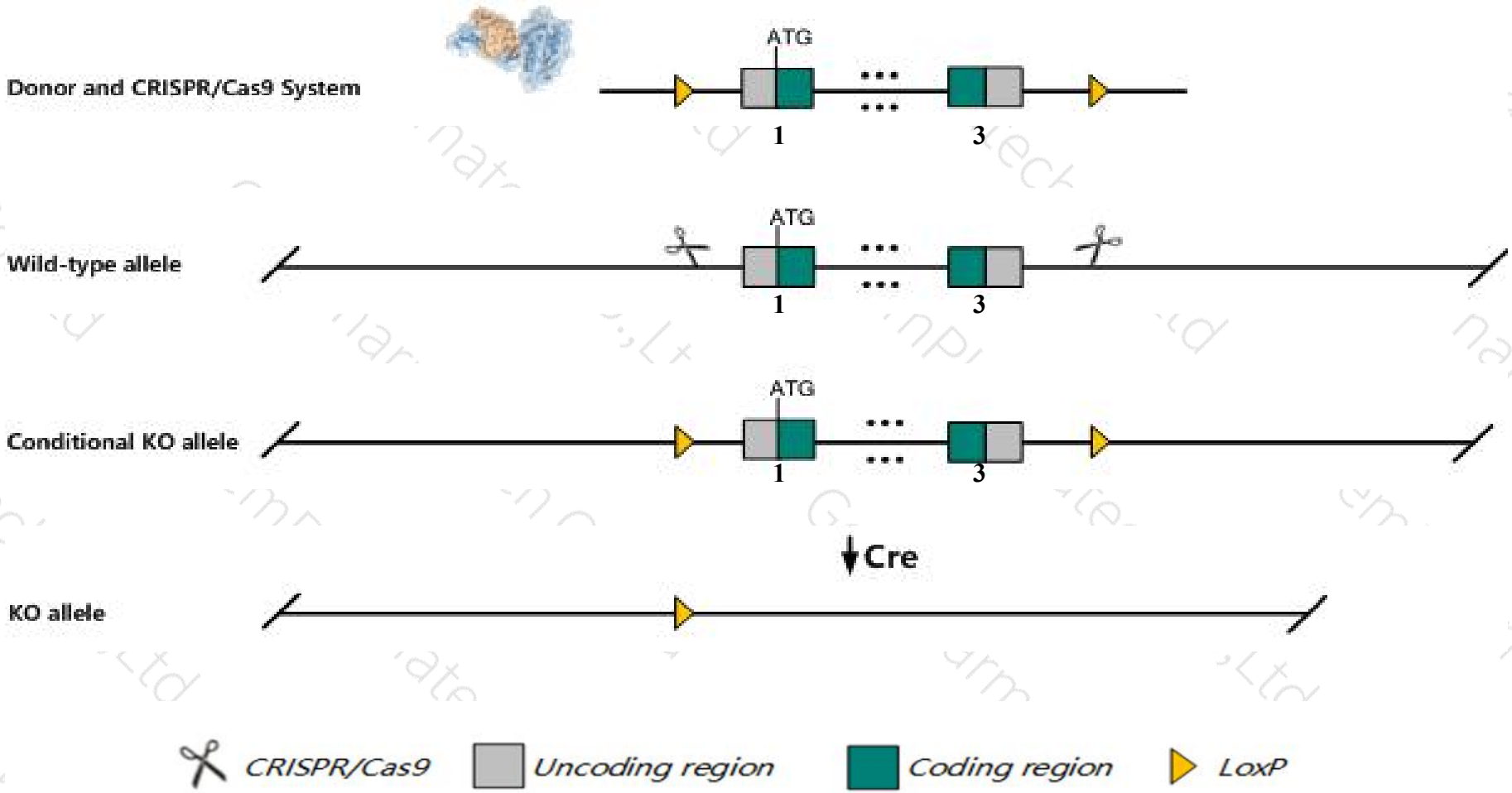
Project Overview

Project Name	***Ccl24***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccl24* gene. The schematic diagram is as follows:



Technical routes

- The *Ccl24* gene has 2 transcripts. According to the structure of *Ccl24* gene, exon1-exon3 of *Ccl24-201* (ENSMUST00000004936.9) 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 *Ccl24* gene. The brief process is as follows:CRISPR/Cas9 system and Donor 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 flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ According to the existing MGI data,Mutant mice are born at the expected Mendelian frequency and appear healthy and normal.

➢ The *Ccl24* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

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Ccl24 chemokine (C-C motif) ligand 24 [Mus musculus (house mouse)]

Gene ID: 56221, updated on 31-Jan-2019

Summary

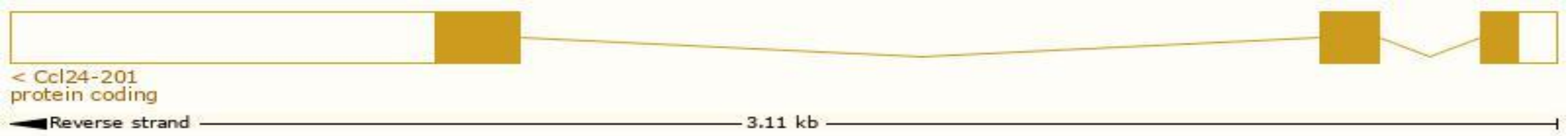
Official Symbol	Ccl24 provided by MGI
Official Full Name	chemokine (C-C motif) ligand 24 provided by MGI
Primary source	MGI:MGI:1928953
See related	Ensembl:ENSMUSG00000004814
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CKb-6, MPIF-2, Scya24
Expression	Broad expression in mammary gland adult (RPKM 5.0), liver E18 (RPKM 4.5) and 19 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

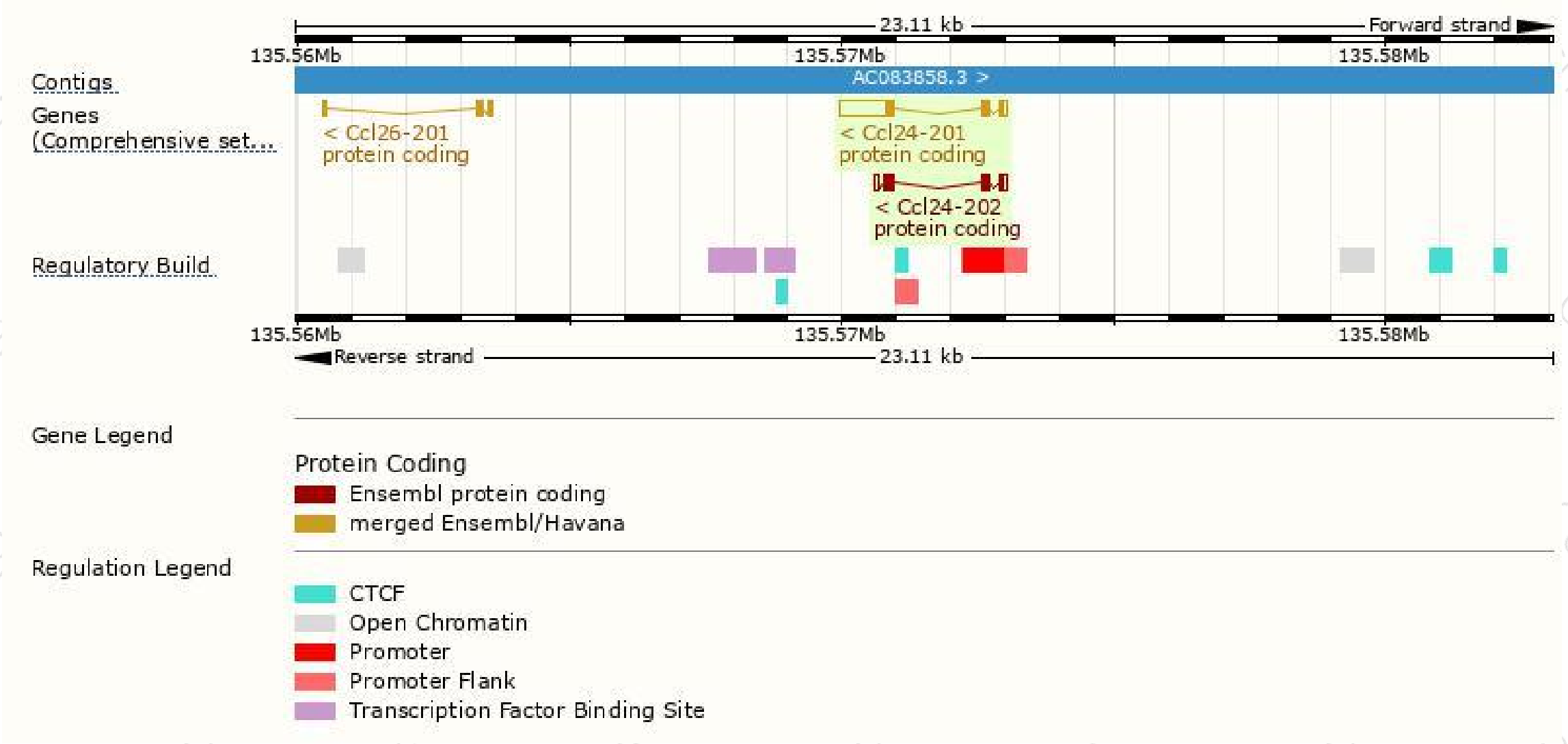
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccl24-201	ENSMUST00000004936.9	1295	119aa	Protein coding	CCDS19742	Q3U0A4 Q9JKC0	TSL:1 GENCODE basic APPRIS P1
Ccl24-202	ENSMUST00000201401.1	561	119aa	Protein coding	CCDS19742	Q3U0A4 Q9JKC0	TSL:1 GENCODE basic APPRIS P1

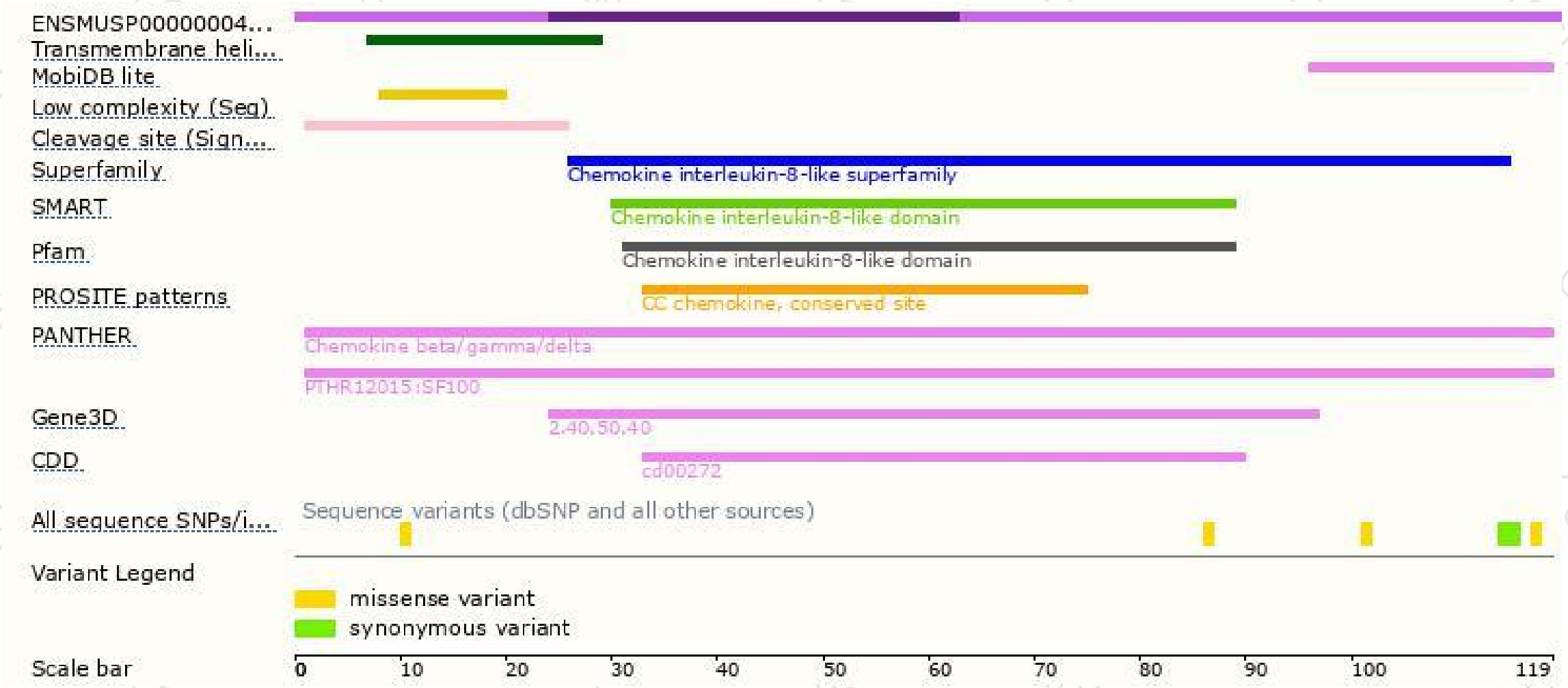
The strategy is based on the design of *Ccl24-201* transcript,The transcription is shown below



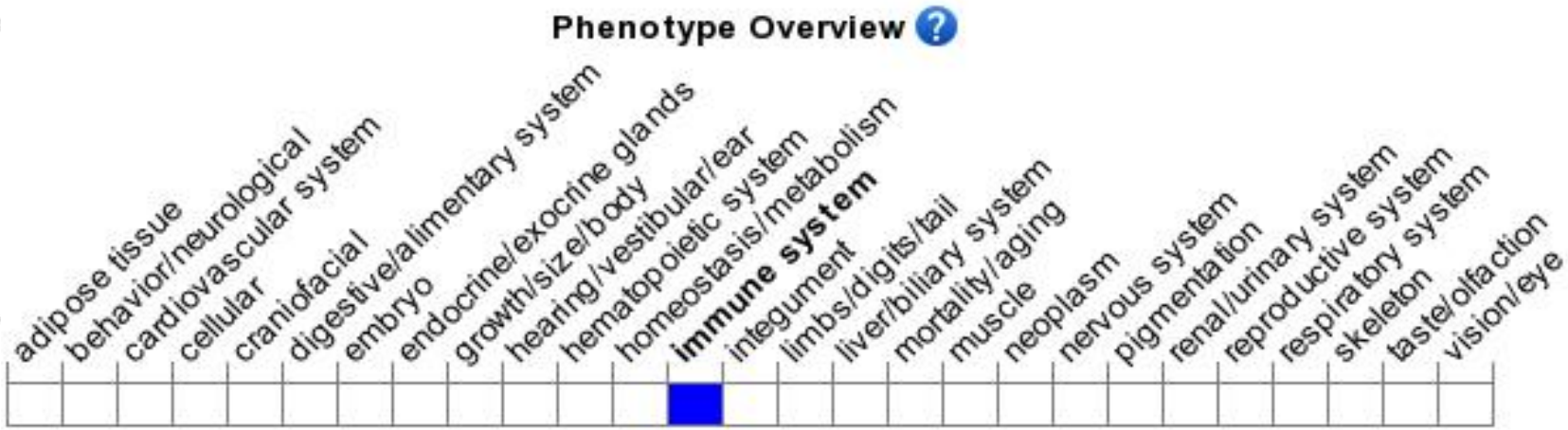
Genomic location distribution



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/).

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

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