Ccl12 Cas9-KO Strategy

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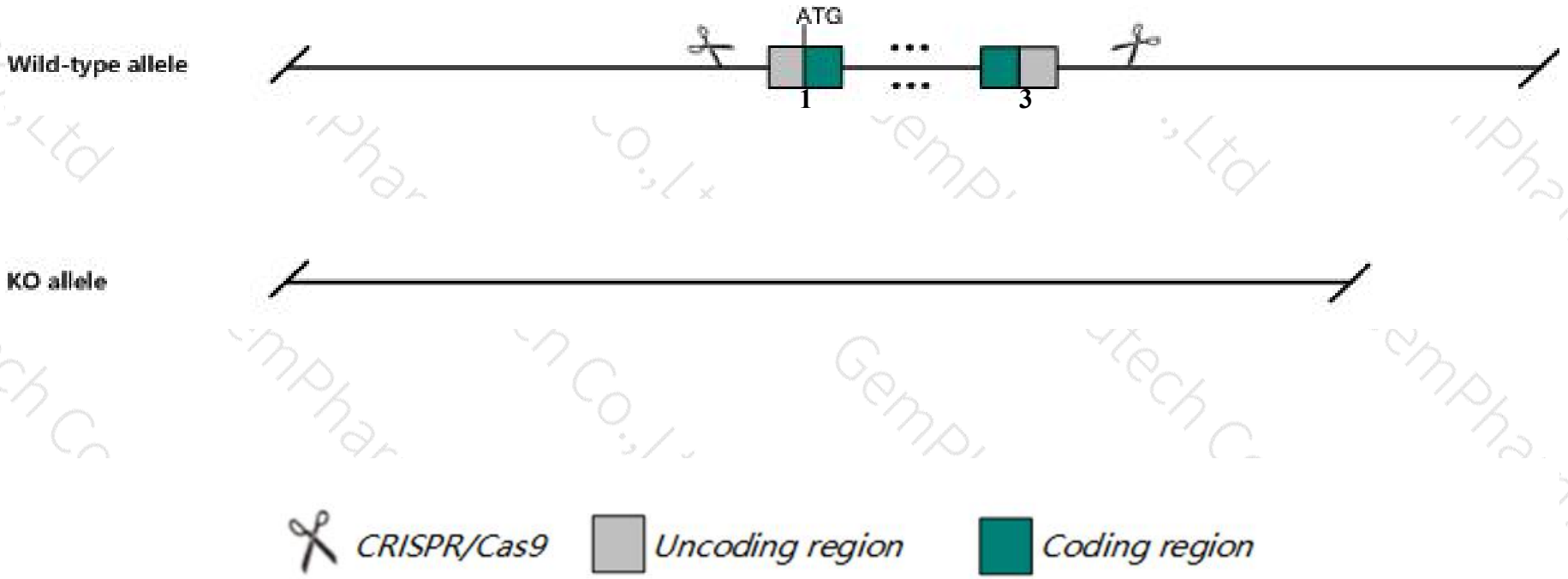
Project Overview

Project Name	***Ccl12***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccl12* gene. The schematic diagram is as follows:



Technical routes

➢ The *Ccl12* gene has 2 transcripts. According to the structure of *Ccl12* gene, exon1-exon3 of *Ccl12-201* (ENSMUST00000000194.3) 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 *Ccl12* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for a knock-out allele are viable, fertile and developmentally normal with no apparent alterations in monocyte homeostasis.

- The *Ccl12* gene is located on the Chr11. 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）

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Ccl12 chemokine (C-C motif) ligand 12 [Mus musculus (house mouse)]

Gene ID: 20293, updated on 31-Jan-2019

Summary

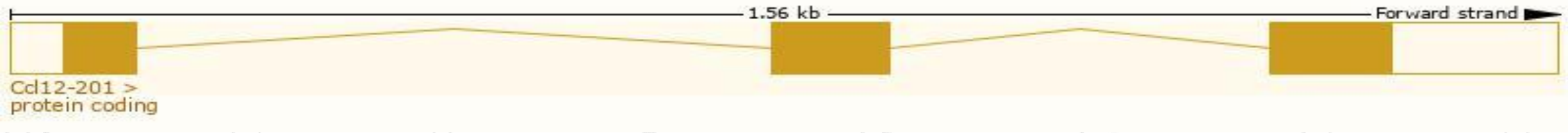
Official Symbol	Ccl12 provided by MGI
Official Full Name	chemokine (C-C motif) ligand 12 provided by MGI
Primary source	MGI:MGI:108224
See related	Ensembl:ENSMUSG00000035352
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	MCP-5, Scya12
Expression	Broad expression in bladder adult (RPKM 5.0), genital fat pad adult (RPKM 3.4) and 22 other tissues See more

Transcript information（Ensembl）

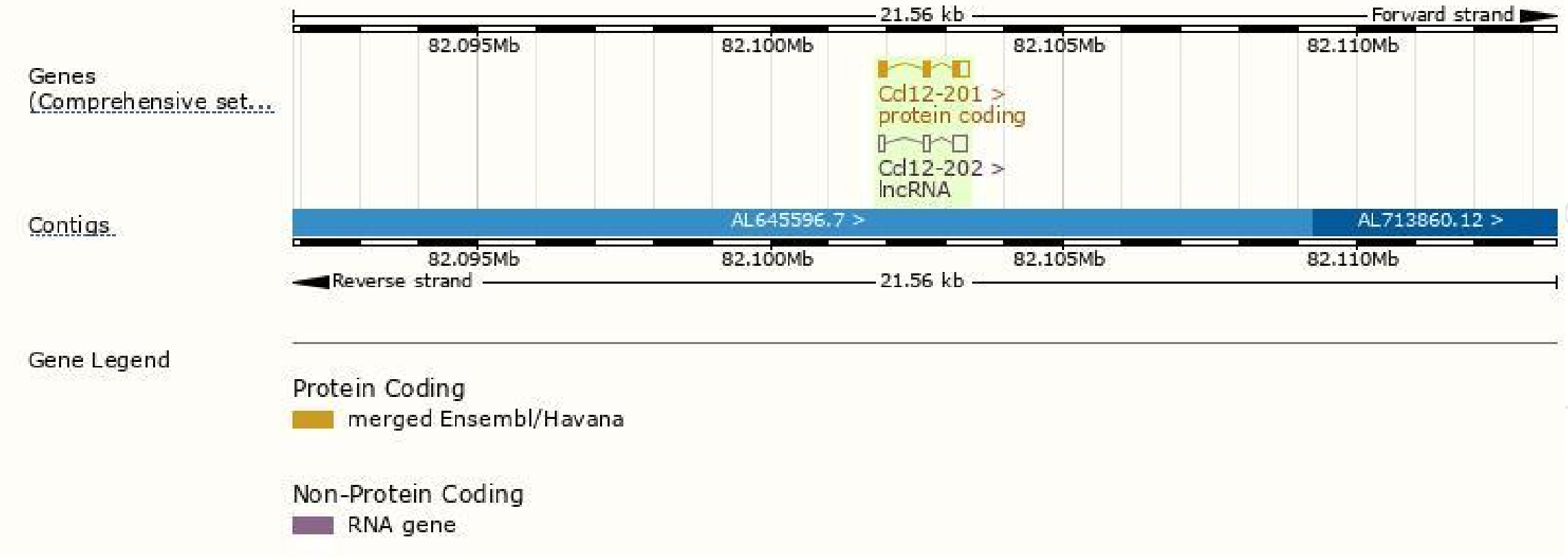
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccl12-201	ENSMUST00000000194.3	537	104aa	Protein coding	CCDS36247	Q545B5 Q62401	TSL:1 GENCODE basic APPRIS P1
Ccl12-202	ENSMUST00000124916.1	481	No protein	lncRNA	-	-	TSL:2

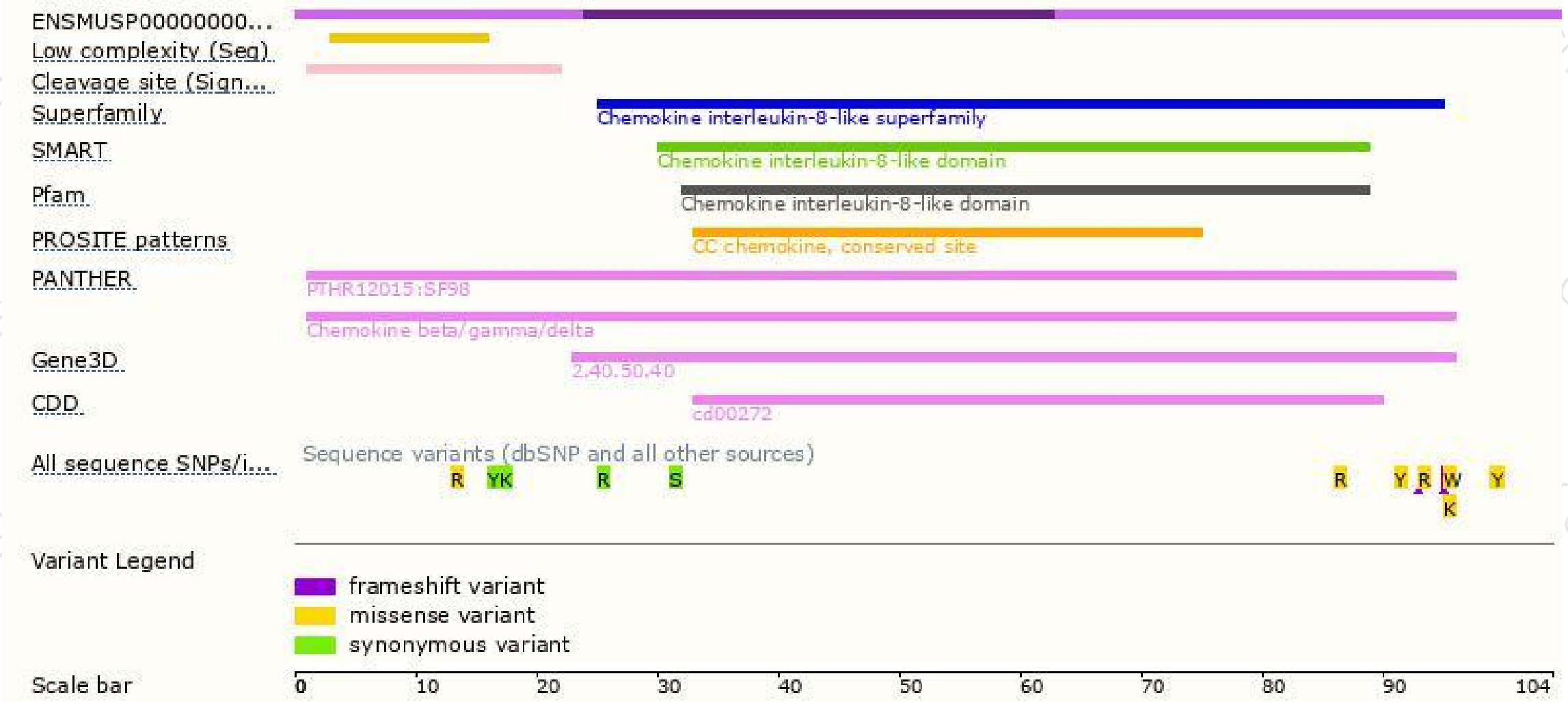
The strategy is based on the design of *Ccl12-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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