

Ccl25 Cas9-CKO Strategy

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Overview

Target Gene Name

- *Ccl25*

Project Type

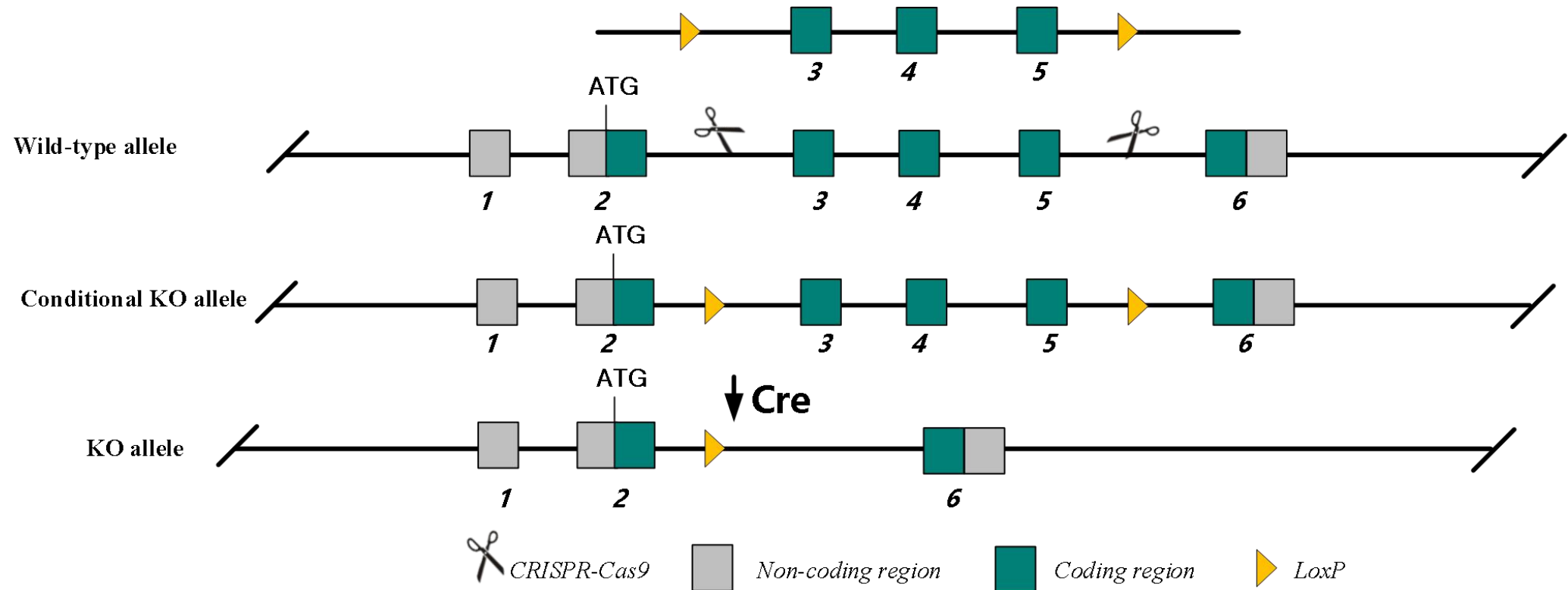
- Cas9-CKO

Genetic Background

- C57BL/6JGpt

Strain Strategy

Donor and CRISPR-Cas9 System



Schematic representation of CRISPR-Cas9 engineering used to edit the *Ccl25* gene.

Technical Information

- The *Ccl25* gene has 10 transcripts. According to the structure of *Ccl25* gene, exon3-5 of *Ccl25*-201 (ENSMUST00000024004.9) transcript is recommended as the knockout region. The region contains 328 bp of coding sequences. Knocking out the region will result in disruption of the function of *Ccl25*.
- In this project we use CRISPR-Cas9 technology to modify *Ccl25* 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.
- 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.

Gene Information

Ccl25 chemokine (C-C motif) ligand 25 [*Mus musculus* (house mouse)]

[Download Datasets](#)

Gene ID: 20300, updated on 12-Apr-2023

Summary

Official Symbol	Ccl25 provided by MGI
Official Full Name	chemokine (C-C motif) ligand 25 provided by MGI
Primary source	MGI:MGI:1099448
See related	Ensembl:ENSMUSG00000023235 AllianceGenome:MGI:1099448
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	TECK; CKb15; Scya25; A130072A22Rik
Summary	Enables chemokine activity. Acts upstream of or within chemotaxis and leukocyte migration. Predicted to be located in extracellular region. Predicted to be active in extracellular space. Is expressed in 3rd branchial pouch; central nervous system; hemolymphoid system; retina; and thymus/parathyroid primordium. Orthologous to human CCL25 (C-C motif chemokine ligand 25). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Biased expression in large intestine adult (RPKM 91.4), thymus adult (RPKM 40.0) and 2 other tissues See more
Orthologs	human all
NEW	Try the new Gene table
	Try the new Transcript table

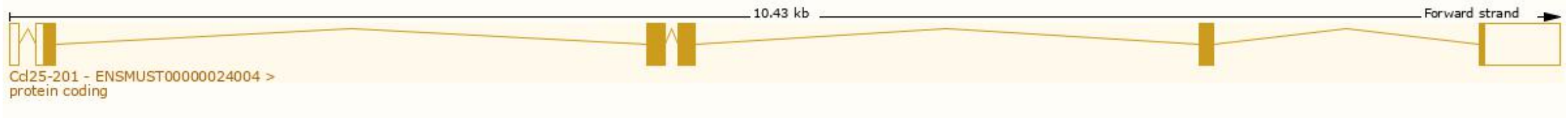
Source: <https://www.ncbi.nlm.nih.gov/>

Transcript Information

The gene has 10 transcripts, all transcripts are shown below:

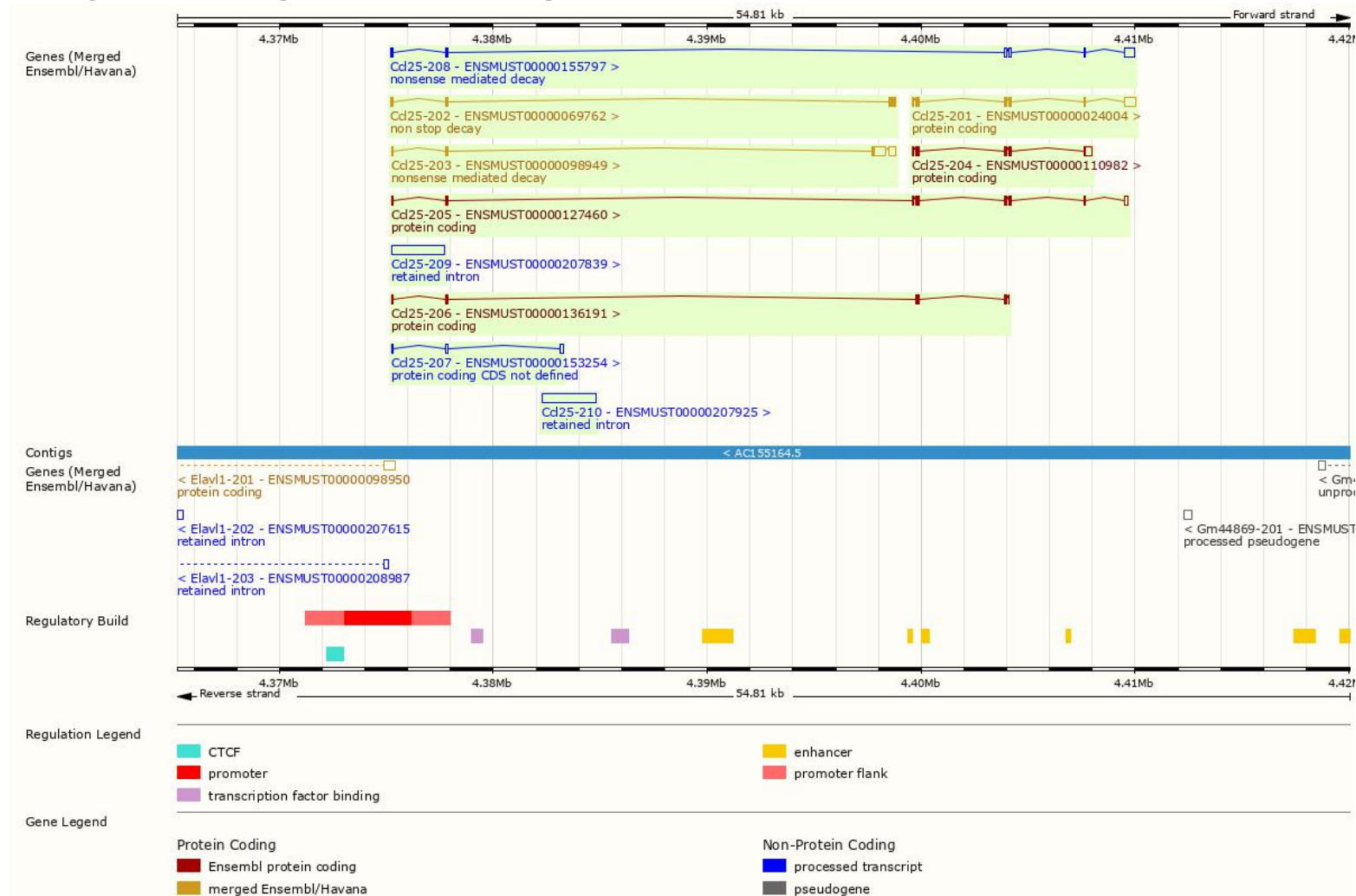
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000207925.2	Ccl25-210	2549	No protein	Retained intron		-	TSL:NA
ENSMUST00000207839.2	Ccl25-209	2461	No protein	Retained intron		-	TSL:NA
ENSMUST00000155797.8	Ccl25-208	1061	53aa	Nonsense mediated decay		A0A087WRS0	TSL:2
ENSMUST00000153254.3	Ccl25-207	362	No protein	Protein coding CDS not defined		-	TSL:3
ENSMUST00000136191.8	Ccl25-206	395	119aa	Protein coding		D3Z470	TSL:3 CDS 3' incomplete
ENSMUST00000127460.8	Ccl25-205	867	228aa	Protein coding		D3YWJ1	Ensembl Canonical Gencode basic APPRIS ALT2 TSL:5
ENSMUST00000110982.8	Ccl25-204	823	134aa	Protein coding		Q3V2F3	Gencode basic APPRIS P4 TSL:1
ENSMUST00000098949.11	Ccl25-203	1109	89aa	Nonsense mediated decay		Q3U4J3	TSL:2
ENSMUST00000069762.16	Ccl25-202	485	146aa	Non stop decay		F7C0M8	TSL:2
ENSMUST00000024004.9	Ccl25-201	1058	144aa	Protein coding	CCDS22085	Q35903	Gencode basic APPRIS ALT2 TSL:1

The strategy is based on the design of *Ccl25-201* transcript, the transcription is shown below:



Source: <https://www.ensembl.org>

Genomic Information



Protein Information



Important Information

- Mice homozygous for a knock-out allele exhibit impaired accumulation of antigen-specific CD8⁺ T lymphocytes within both lamina propria and epithelium of the small intestine.
- This strategy don't affect transcription *Ccl25*-202, 203, 207, 208, 209 and 210, the risk is known.
- *Ccl25* is located on Chr8. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is 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 the existing technology level.