

Ccr9 Cas9-KO Strategy

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Design Date:

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Project Overview



Project Name

Ccr9

Project type

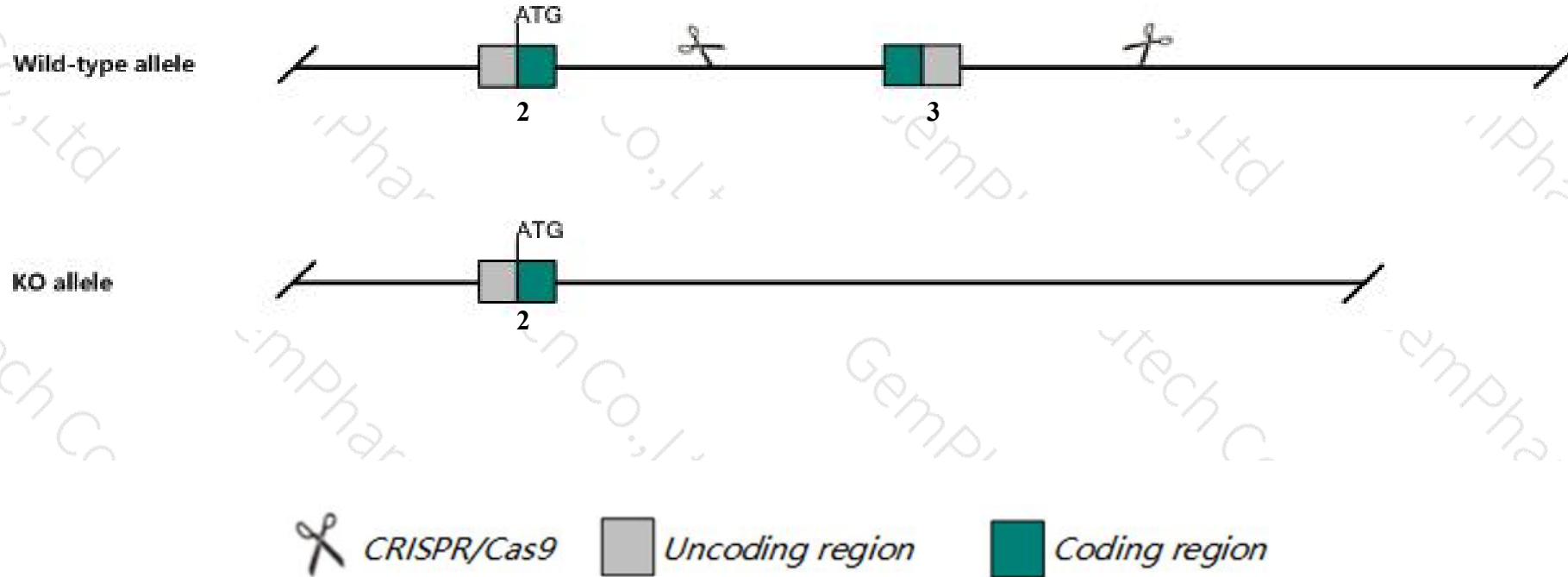
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccr9* gene. The schematic diagram is as follows:



- The *Ccr9* gene has 6 transcripts. According to the structure of *Ccr9* gene, exon3 of *Ccr9-203* (ENSMUST00000166236.8) transcript is recommended as the knockout region. The region contains most 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 *Ccr9* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Homozygous null mice have altered trafficking of lymphocytes to the intestine.
- The KO region overlaps with the *Gm17021* gene. Knockout the region may affect the function of *Gm17021* gene.
- The *Ccr9* gene is located on the Chr9. 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)

Ccr9 chemokine (C-C motif) receptor 9 [*Mus musculus* (house mouse)]

Gene ID: 12769, updated on 12-Aug-2019

Summary

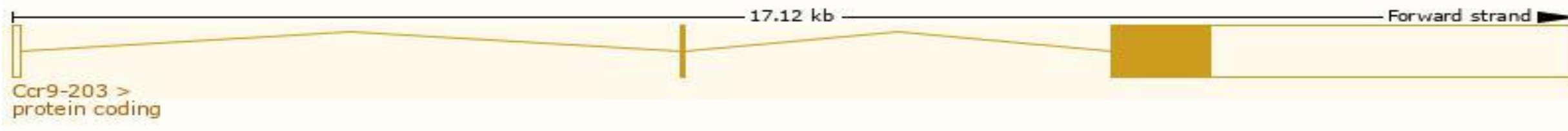
| | |
|---------------------------|---|
| Official Symbol | Ccr9 provided by MGI |
| Official Full Name | chemokine (C-C motif) receptor 9 provided by MGI |
| Primary source | MGI:MGI:1341902 |
| See related | Ensembl:ENSMUSG00000029530 |
| Gene type | protein coding |
| RefSeq status | VALIDATED |
| Organism | Mus musculus |
| Lineage | Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus |
| Also known as | Cmkbr10; GPR-9-6; A130091K22Rik |
| Expression | Restricted expression toward thymus adult (RPKM 118.6) See more |
| Orthologs | human all |

Transcript information (Ensembl)

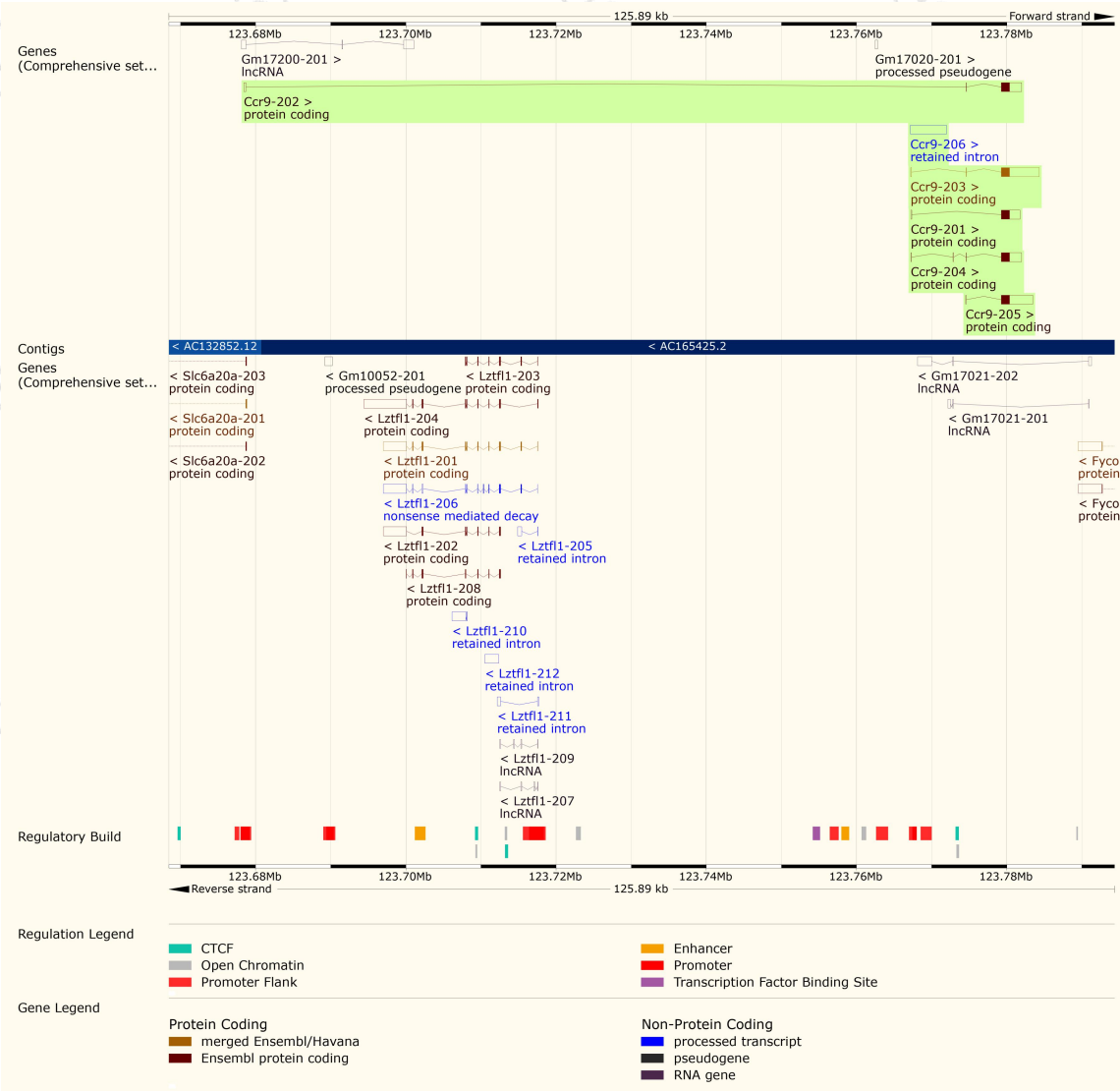
The gene has 6 transcripts, all transcripts are shown below:

| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|----------|--------------------------------------|------|-----------------------|-----------------|---------------------------|------------------------|-------------------------------|
| Ccr9-203 | ENSMUST00000166236.8 | 5197 | 369aa | Protein coding | CCDS23662 | Q9WUT7 | TSL:1 GENCODE basic APPRIS P1 |
| Ccr9-205 | ENSMUST00000180093.1 | 4239 | 369aa | Protein coding | CCDS23662 | Q9WUT7 | TSL:1 GENCODE basic APPRIS P1 |
| Ccr9-202 | ENSMUST00000163559.7 | 3004 | 369aa | Protein coding | CCDS23662 | Q9WUT7 | TSL:1 GENCODE basic APPRIS P1 |
| Ccr9-204 | ENSMUST00000168910.1 | 2888 | 369aa | Protein coding | CCDS23662 | Q9WUT7 | TSL:1 GENCODE basic APPRIS P1 |
| Ccr9-201 | ENSMUST00000111454.3 | 2620 | 357aa | Protein coding | - | F8WIS0 | TSL:5 GENCODE basic |
| Ccr9-206 | ENSMUST00000215921.1 | 4811 | No protein | Retained intron | - | - | TSL:NA |

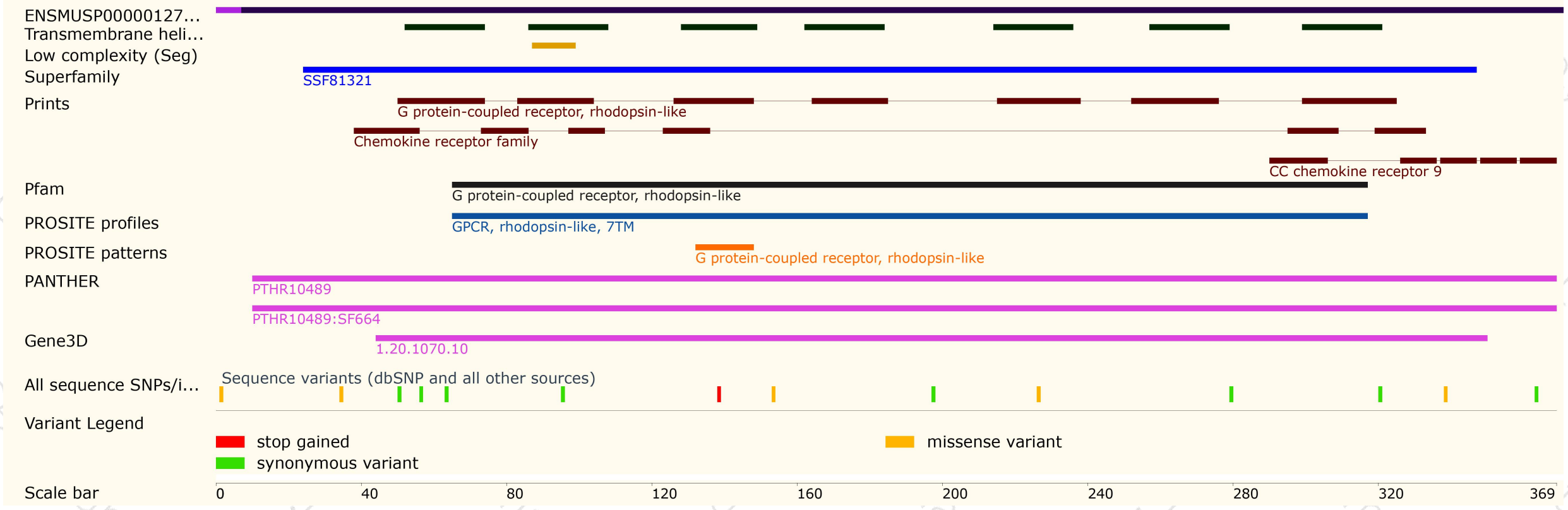
The strategy is based on the design of *Ccr9-203* transcript, The transcription is shown below



Genomic location distribution

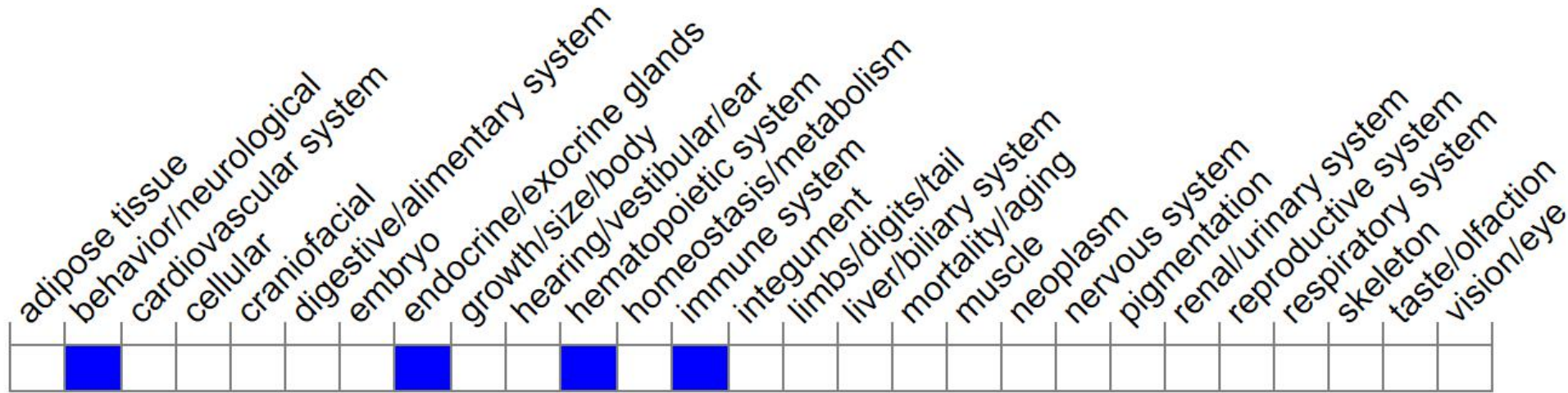


Protein domain



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, Homozygous null mice have altered trafficking of lymphocytes to the intestine.

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

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