Ccl28 Cas9-CKO Strategy

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Design Date: 2019-9-12
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Project Overview

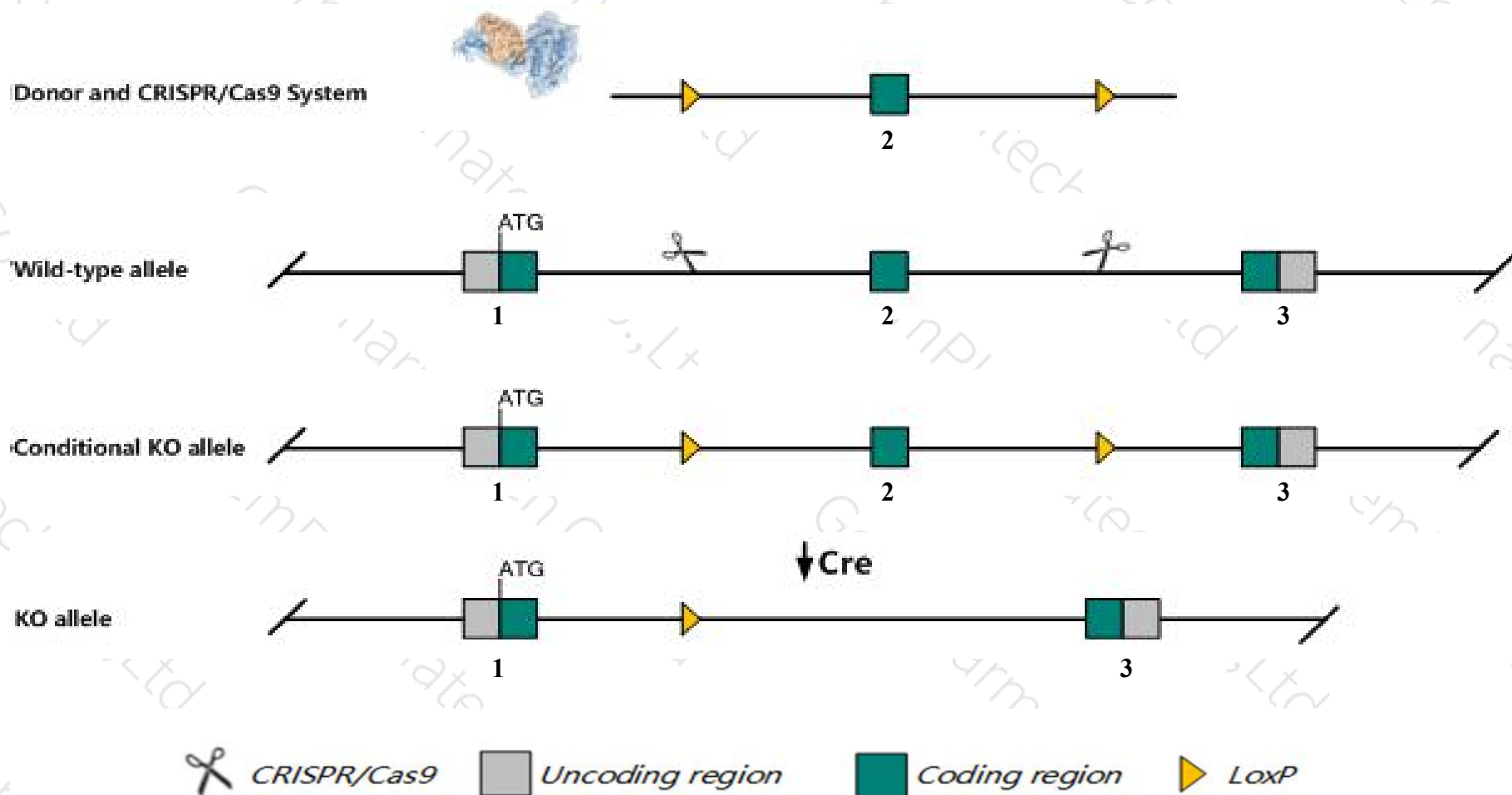|	
Project Name	*Ccl28*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccl28* gene. The schematic diagram is as follows:

Technical routes

➤ The *Ccl28* gene has 2 transcripts. According to the structure of *Ccl28* gene, exon2 of *Ccl28-201* (ENSMUST00000099241.3) transcript is recommended as the knockout region.The region contains Ens 127bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Ccl28* 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

➢ The *Ccl28* gene is located on the Chr13. 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）

Ccl28 chemokine (C-C motif) ligand 28 [Mus musculus (house mouse)]
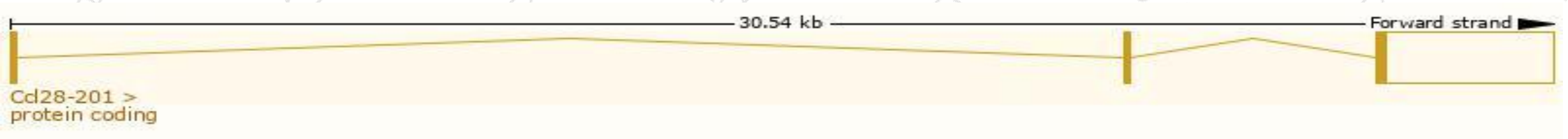
Gene ID: 56838, updated on 31-Jan-2019

Summary

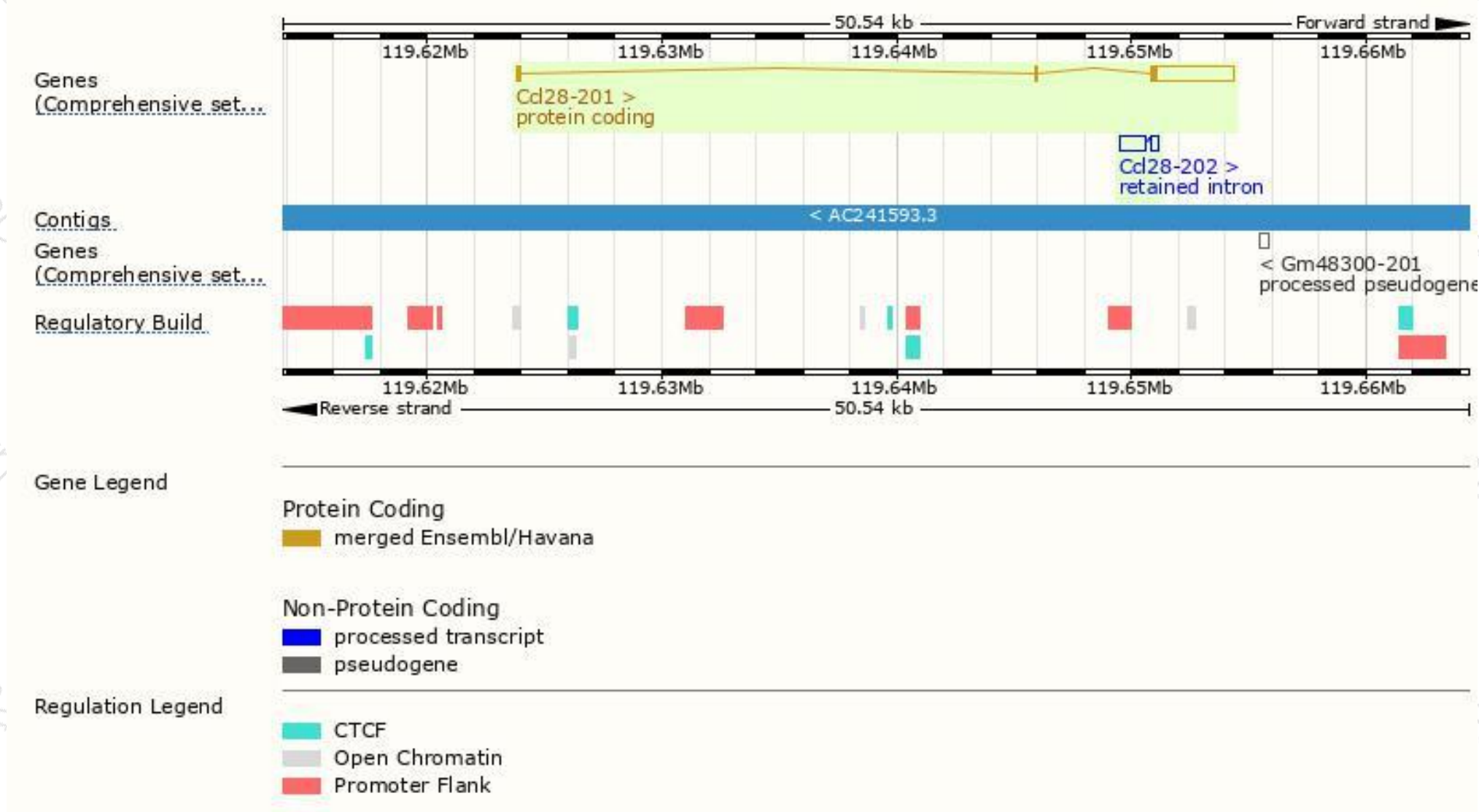|	
Official Symbol	Ccl28 provided by MGI
Official Full Name	chemokine (C-C motif) ligand 28 provided by MGI
Primary source	MGI:MGI:1861731
See related	Ensembl:ENSMUSG00000074715
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CCK1, MEC, Scya28
Expression	Biased expression in large intestine adult (RPKM 4.1), colon adult (RPKM 3.6) and 9 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

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

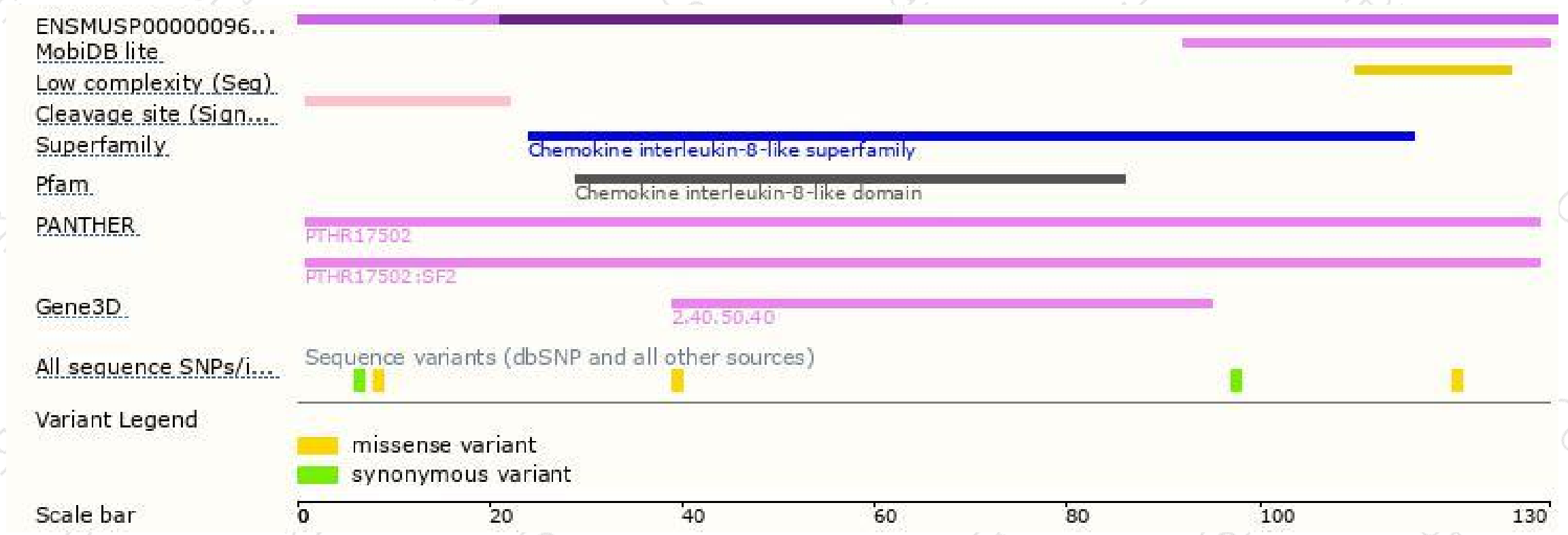| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccl28-201	ENSMUST00000099241.3	3740	130aa	Protein coding	CCDS56900	Q9JIL2	TSL:1 GENCODE basic APPRIS P1
Ccl28-202	ENSMUST00000225880.1	1396	No protein	Retained intron	-	-	

The strategy is based on the design of *Ccl28-201* transcript,The transcription is shown below

Cd28-201 >
protein coding

Genomic location distribution

Protein domain

ENSMUSP00000096...
MobiDB lite
Low complexity (Seg)
Cleavage site (Sign...
Superfamily
Chemokine interleukin-8-like superfamily
Pfam
Chemokine interleukin-8-like domain
PANTHER
PTHR17502
PTHR17502:SF2
Gene3D
2.40.50.40
All sequence SNPs/i...
Sequence variants (dbSNP and all other sources)
Variant Legend
missense variant
synonymous variant
Scale bar
0   20   40   60   80   100   130

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