

Ccnl2 Cas9-CKO Strategy

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Project Overview

Project Name

Ccnl2

Project type

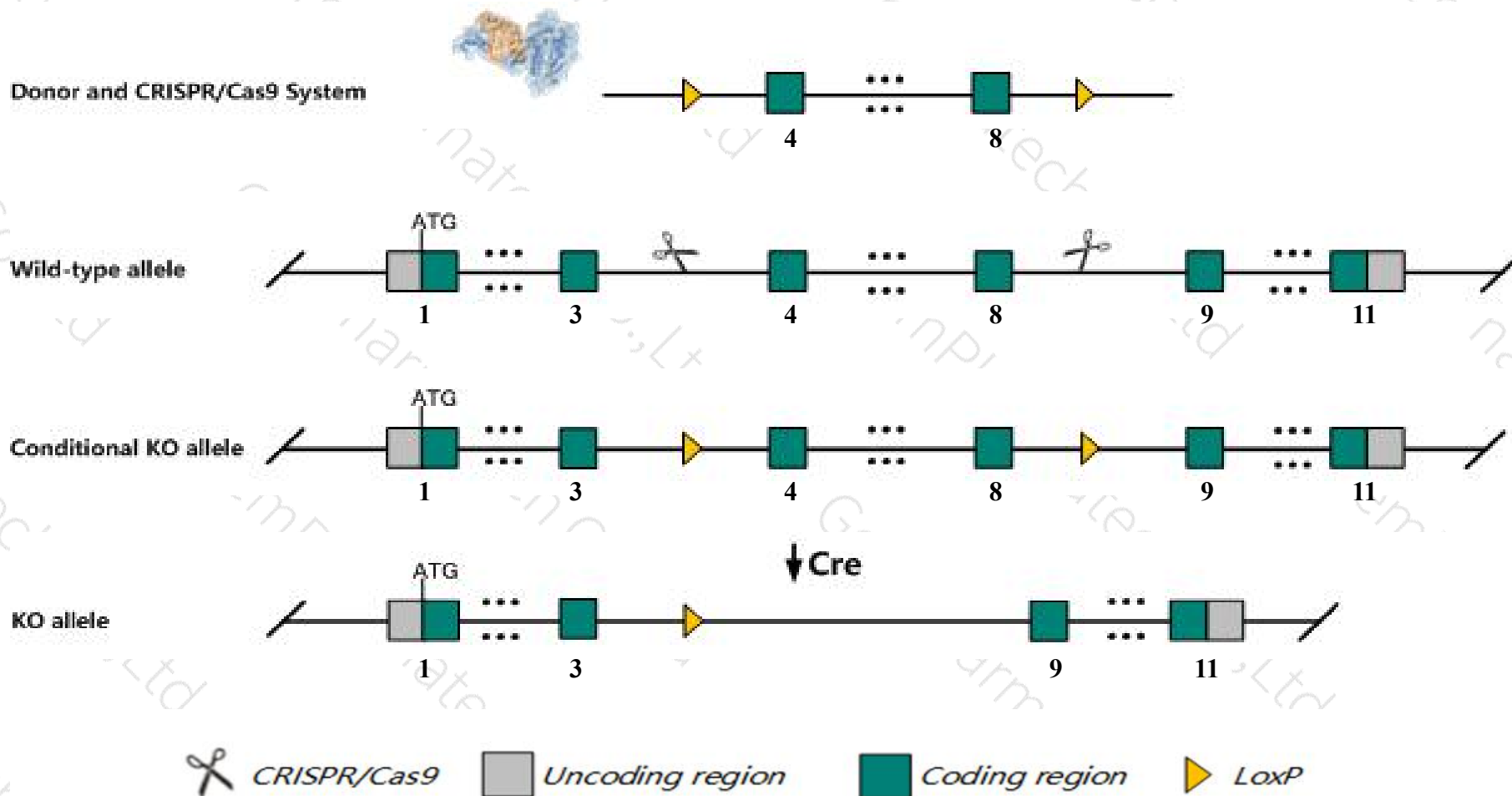
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccnl2* gene. The schematic diagram is as follows:



Technical routes

- The *Ccnl2* gene has 5 transcripts. According to the structure of *Ccnl2* gene, exon4-exon8 of *Ccnl2-201* (ENSMUST00000030944.10) transcript is recommended as the knockout region. The region contains 533bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ccnl2* 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 *Ccnl2* gene is located on the Chr4. 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Ccnl2 cyclin L2 [Mus musculus (house mouse)]

Gene ID: 56036, updated on 31-Jan-2019

Summary



Official Symbol	Ccnl2 provided by MGI
Official Full Name	cyclin L2 provided by MGI
Primary source	MGI:MGI:1927119
See related	Ensembl:ENSMUSG00000029068
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	1700010A01Rik, 1810019L15Rik, 2010319M22Rik, AA409936, AW261738, Ania-6b, HCLA-150, Pcee, SB138
Expression	Ubiquitous expression in limb E14.5 (RPKM 65.5), bladder adult (RPKM 45.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

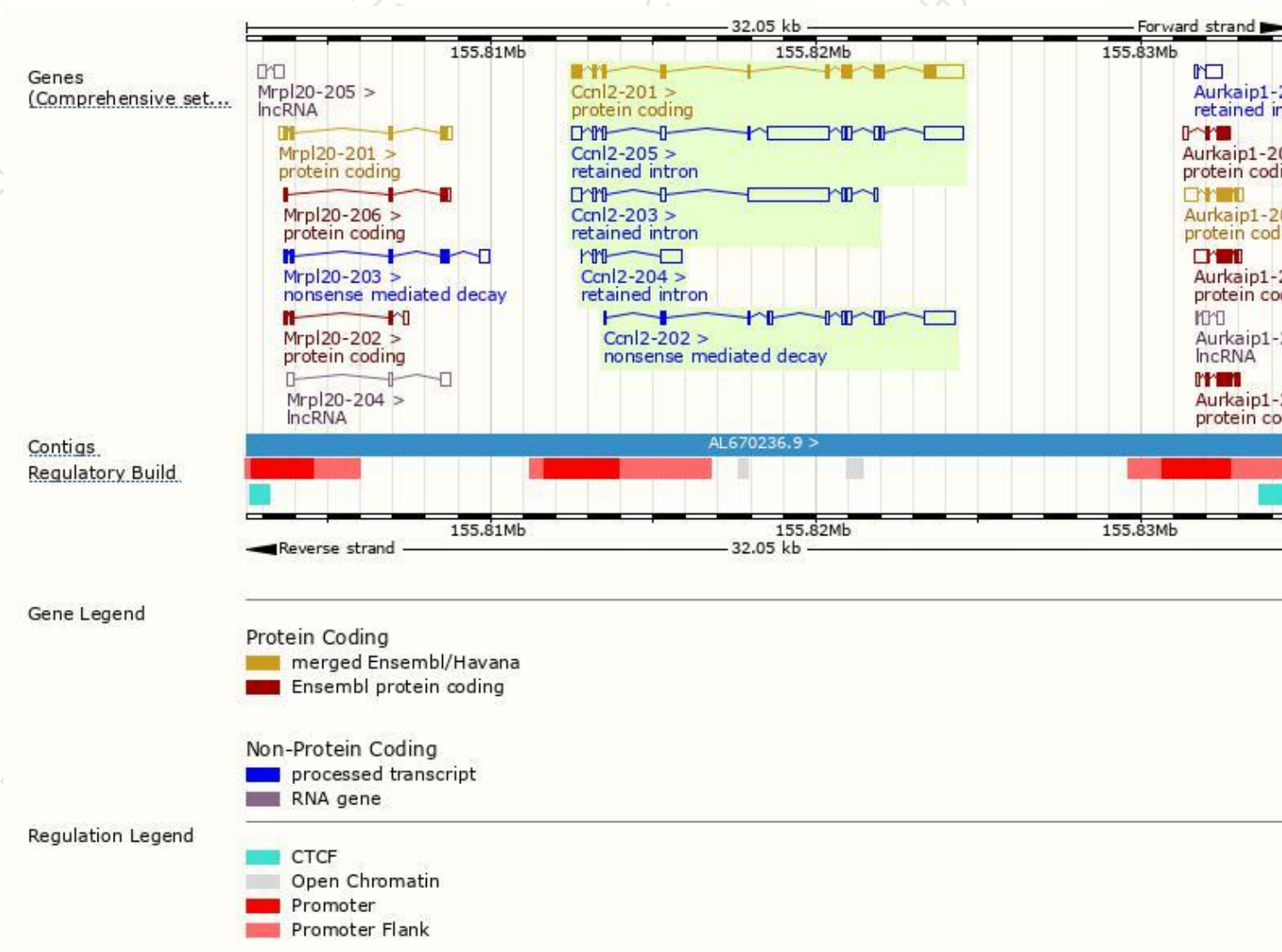
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccnl2-201	ENSMUST00000030944.10	2442	518aa	Protein coding	CCDS19042	Q9JJA7	TSL:1 GENCODE basic APPRIS P1
Ccnl2-202	ENSMUST00000126346.1	1894	93aa	Nonsense mediated decay	-	F6RXL0	CDS 5' incomplete TSL:5
Ccnl2-205	ENSMUST00000139066.7	4220	No protein	Retained intron	-	-	TSL:1
Ccnl2-203	ENSMUST00000129850.7	3411	No protein	Retained intron	-	-	TSL:1
Ccnl2-204	ENSMUST00000136370.1	833	No protein	Retained intron	-	-	TSL:1

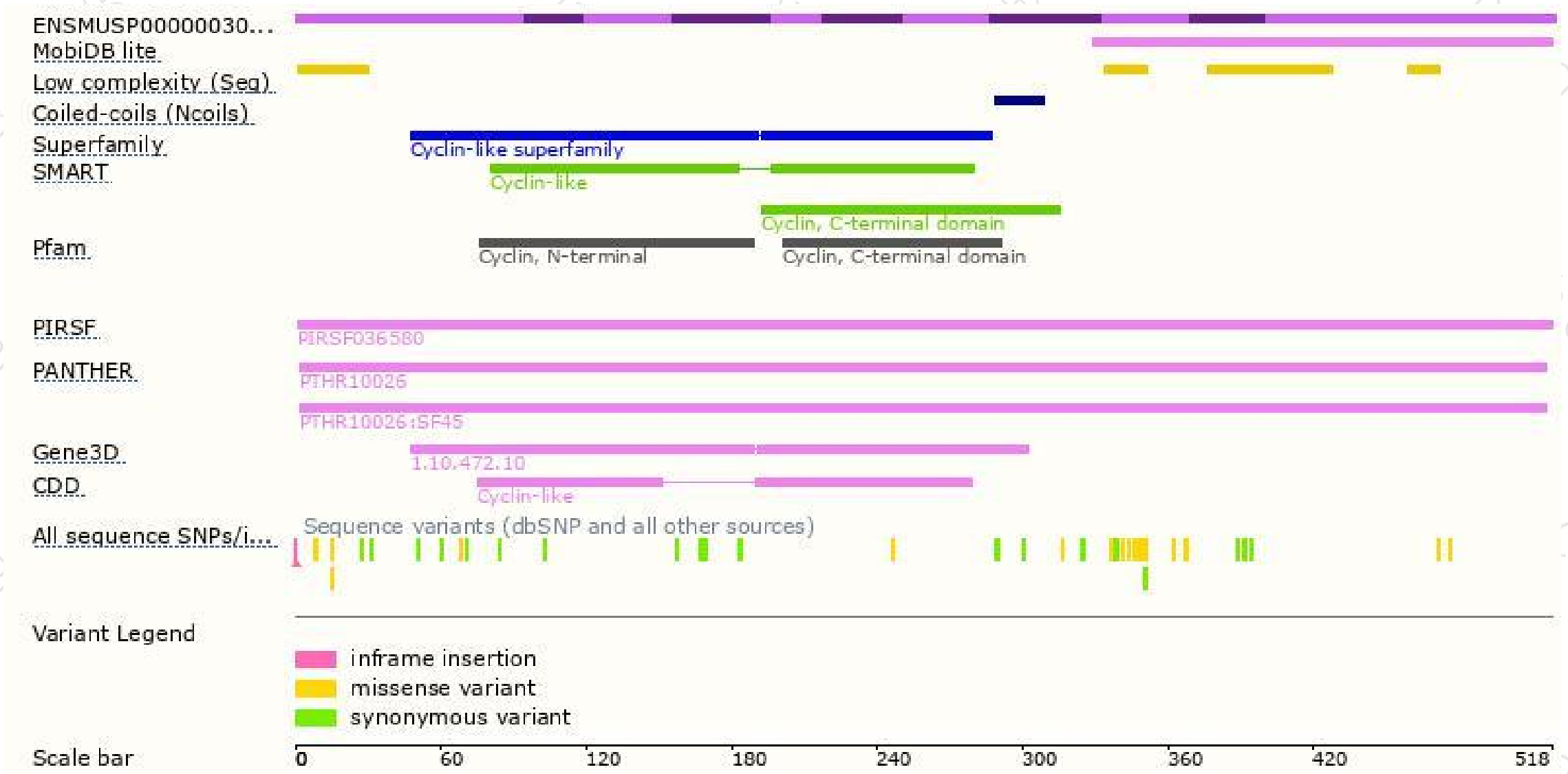
The strategy is based on the design of *Ccnl2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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