

Ccng2 Cas9-CKO Strategy

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Project Overview

Project Name

Ccng2

Project type

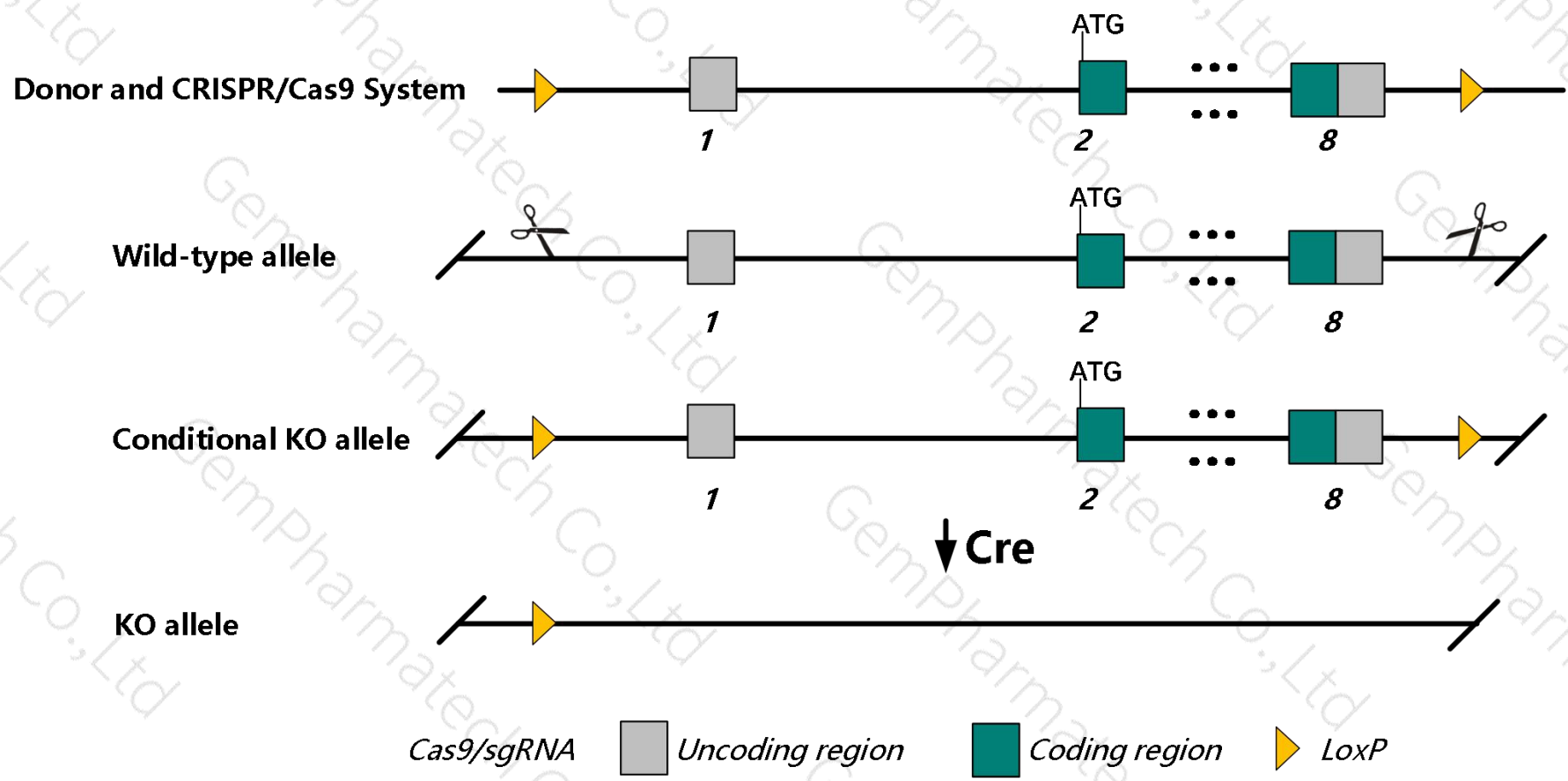
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccng2* gene. The schematic diagram is as follows:



Technical routes

- The *Ccng2* gene has 6 transcripts. According to the structure of *Ccng2* gene, exon1-exon8 of *Ccng2-201* (ENSMUST00000031331.12) 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 *Ccng2* 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 *Ccng2* gene is located on the Chr5. 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)

Ccng2 cyclin G2 [*Mus musculus* (house mouse)]

Gene ID: 12452, updated on 12-Aug-2019

Summary

- Official Symbol

Ccng2 provided by MGI
- Official Full Name

cyclin G2 provided by MGI
- Primary source

MGI:MGI:1095734
- See related

Ensembl:ENSMUSG00000029385
- 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
- Expression

Ubiquitous expression in CNS E14 (RPKM 30.5), whole brain E14.5 (RPKM 26.3) and 27 other tissues [See more](#)
- Orthologs

[human](#) [all](#)

Genomic context

Location: 5; 5 E2

See Ccng2 in [Genome Data Viewer](#)

Exon count: 8

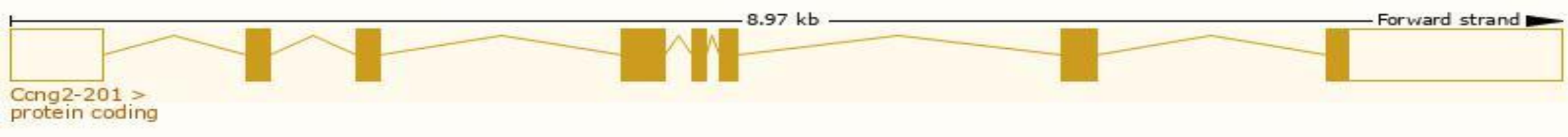
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	5	NC_000071.6 (93267573..93276231)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	5	NC_000071.5 (93696599..93705257)

Transcript information (Ensembl)

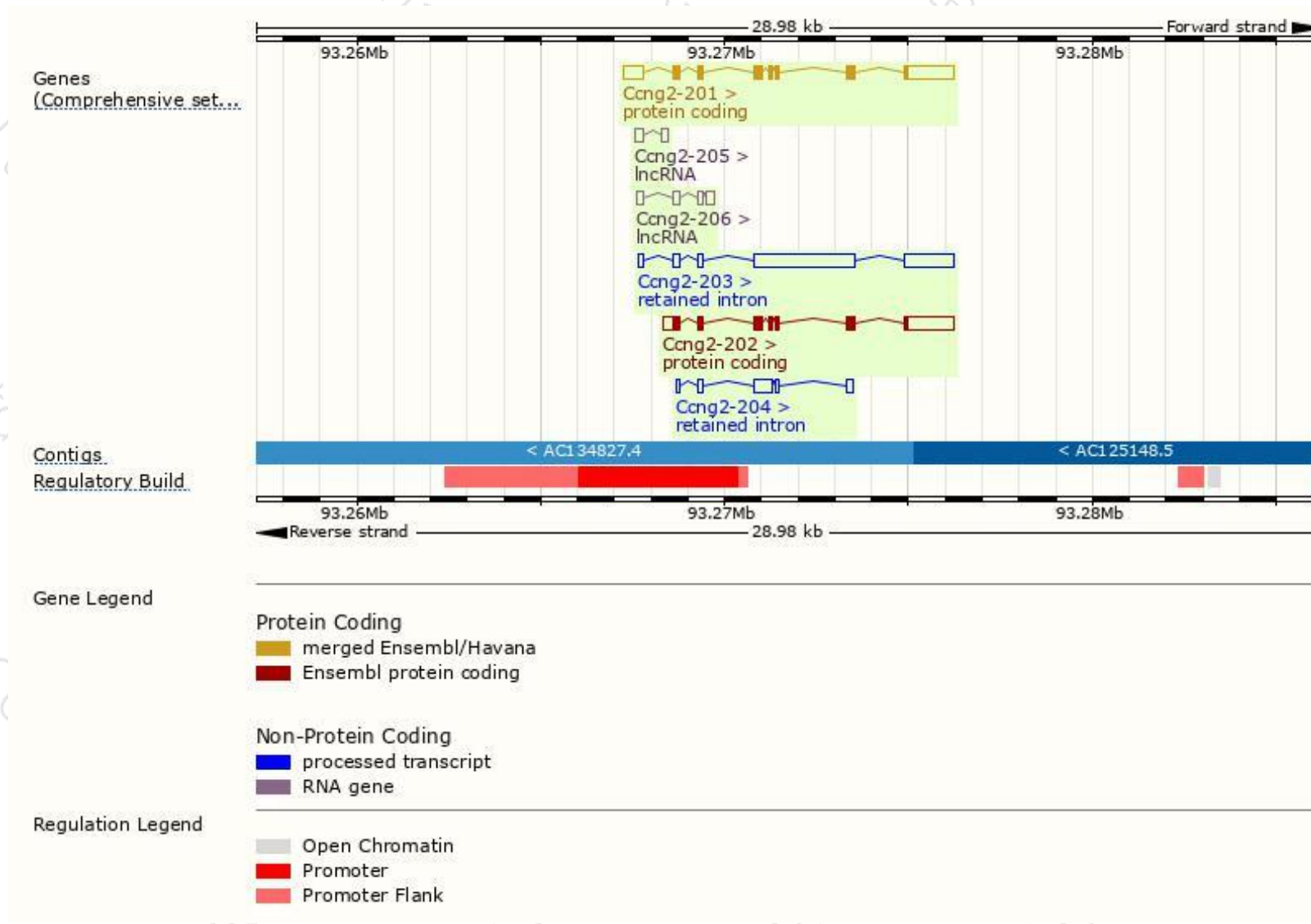
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccng2-201	ENSMUST00000031331.12	2810	344aa	Protein coding	CCDS19437	O08918 Q5HZK4	TSL:1 GENCODE basic APPRIS P1
Ccng2-202	ENSMUST00000121127.1	2570	344aa	Protein coding	CCDS19437	O08918 Q5HZK4	TSL:1 GENCODE basic APPRIS P1
Ccng2-203	ENSMUST00000130183.7	4537	No protein	Retained intron	-	-	TSL:2
Ccng2-204	ENSMUST00000149329.1	923	No protein	Retained intron	-	-	TSL:5
Ccng2-206	ENSMUST00000153260.7	690	No protein	lncRNA	-	-	TSL:3
Ccng2-205	ENSMUST00000152097.1	358	No protein	lncRNA	-	-	TSL:3

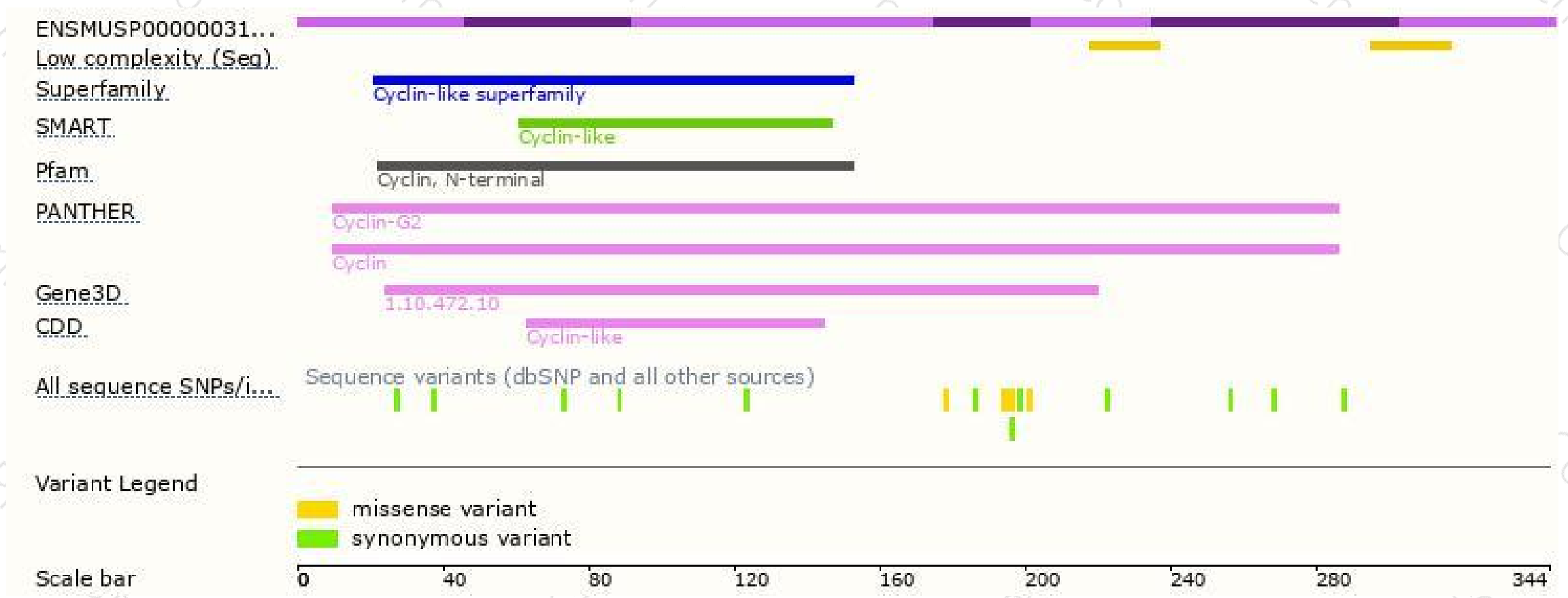
The strategy is based on the design of *Ccng2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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