Ccng2 Cas9-KO Strategy

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Project Overview

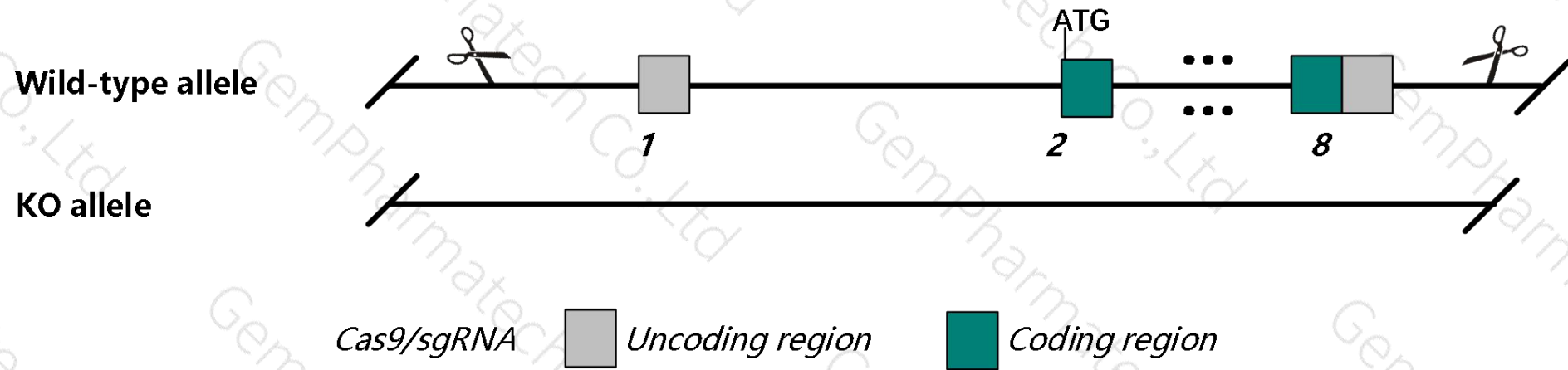|	
Project Name	*Ccng2*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

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

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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology 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
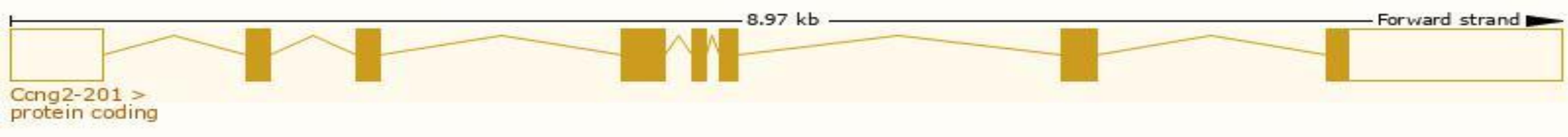
Genomic location distribution
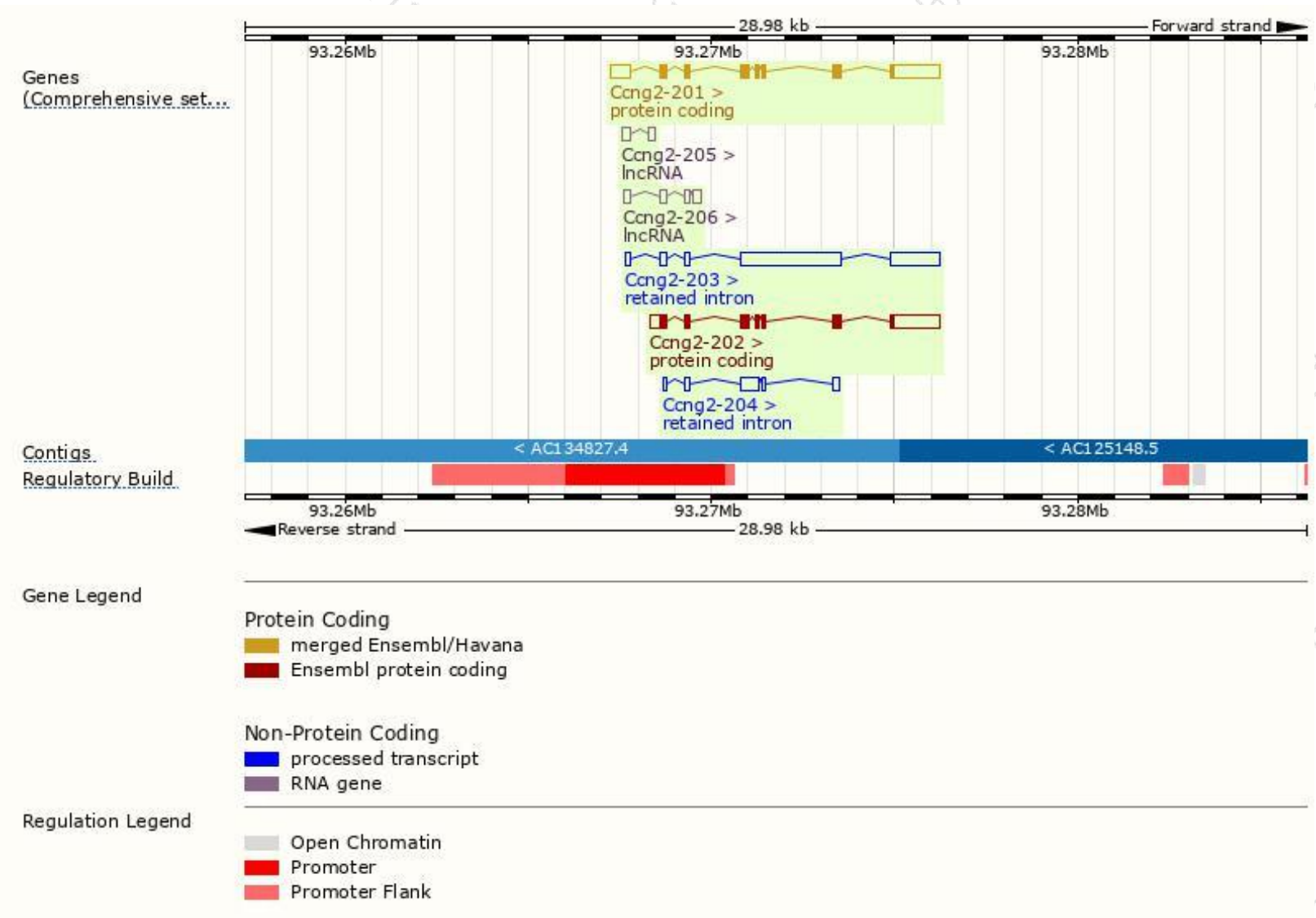
Protein domain
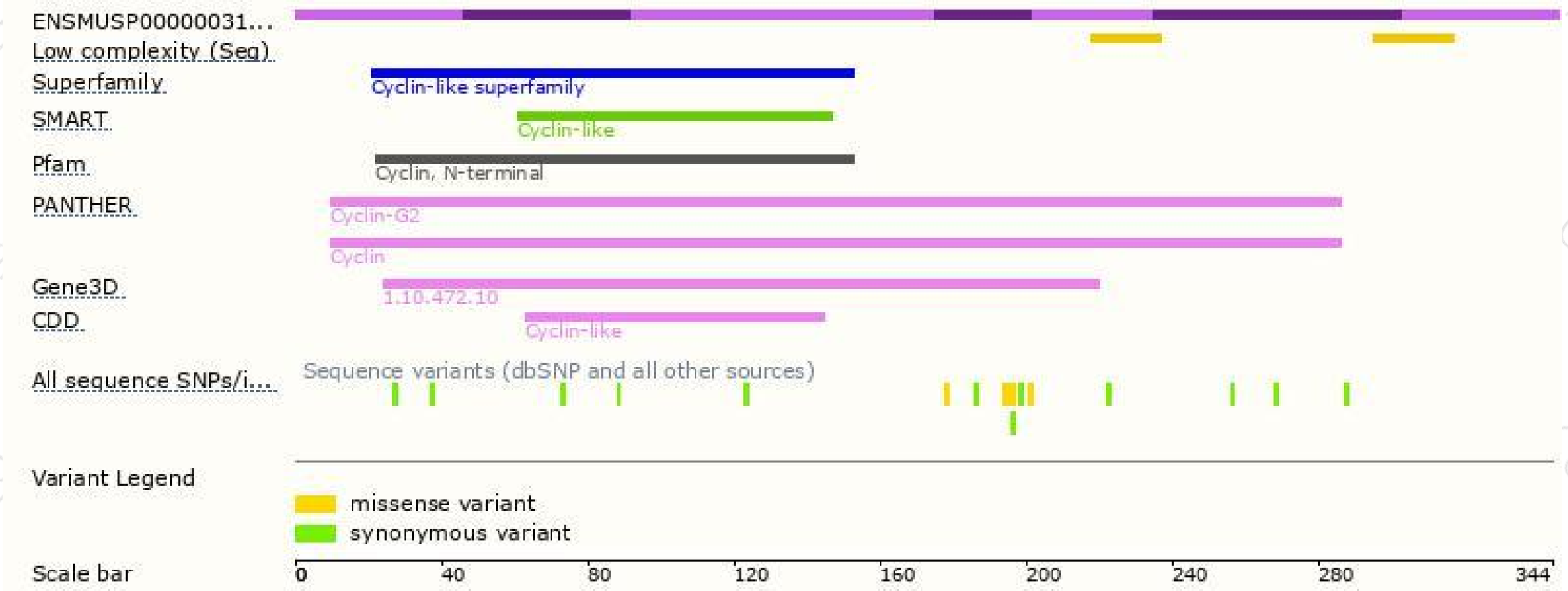
If you have any questions, you are welcome to inquire.
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