

Cpne2 Cas9-KO Strategy

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Project Overview

Project Name

Cpne2

Project type

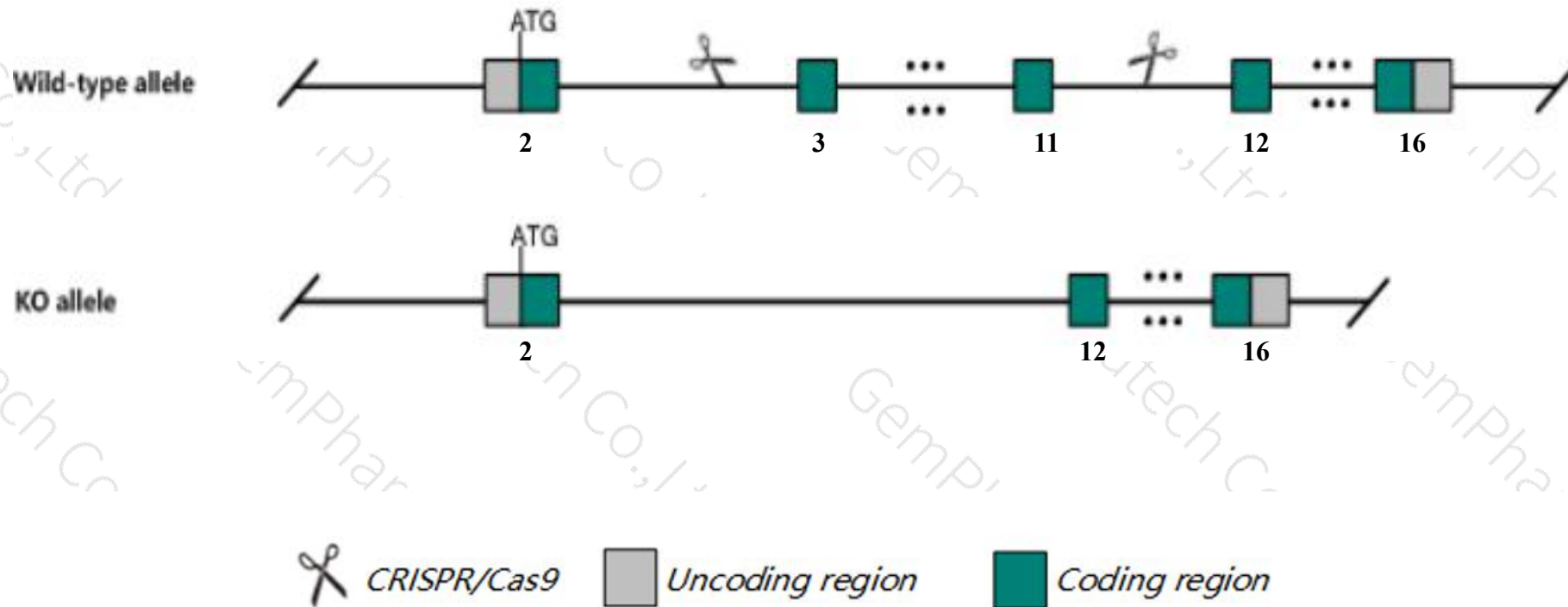
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cpne2* gene. The schematic diagram is as follows:



- The *Cpne2* gene has 6 transcripts. According to the structure of *Cpne2* gene, exon3-exon11 of *Cpne2-201* (ENSMUST00000048653.9) transcript is recommended as the knockout region. The region contains 881bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cpne2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Cpne2* gene is located on the Chr8. 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.
- Transcript *Cpne2*-204 may not be affected.
- 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)

Cpne2 copine II [Mus musculus (house mouse)]

Gene ID: 234577, updated on 13-Mar-2020

Summary



Official Symbol	Cpne2 provided by MGI
Official Full Name	copine II provided by MGI
Primary source	MGI:MGI:2387578
See related	Ensembl:ENSMUSG000000034361
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	3322401K10Rik
Summary	Calcium-dependent membrane-binding proteins may regulate molecular events at the interface of the cell membrane and cytoplasm. This gene is one of several genes that encodes a calcium-dependent protein containing two N-terminal type II C2 domains and an integrin A domain-like sequence in the C-terminus. [provided by RefSeq, Jul 2008]
Expression	Ubiquitous expression in colon adult (RPKM 18.5), subcutaneous fat pad adult (RPKM 17.3) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

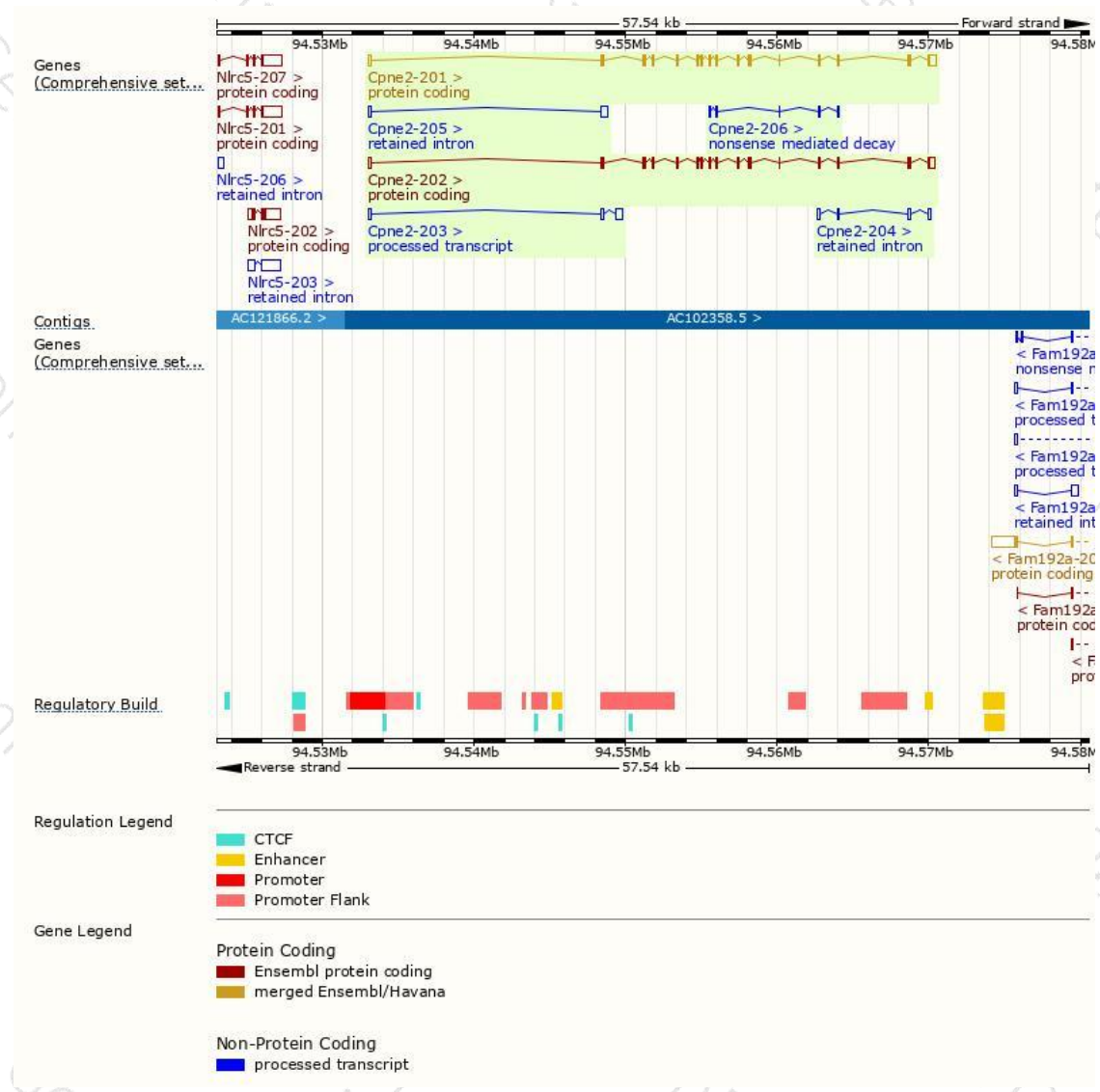
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cpne2-201	ENSMUST00000048653.9	2342	548aa	Protein coding	CCDS22543	P59108	TSL:1 GENCODE basic APPRIS P2
Cpne2-202	ENSMUST00000109537.1	2121	547aa	Protein coding	-	A0A0R4J1D0	TSL:1 GENCODE basic APPRIS ALT 1
Cpne2-206	ENSMUST00000212550.1	388	61aa	Nonsense mediated decay	-	A0A1D5RLP0	CDS 5' incomplete TSL:3
Cpne2-203	ENSMUST00000136550.7	833	No protein	Processed transcript	-	-	TSL:1
Cpne2-204	ENSMUST00000156377.1	655	No protein	Retained intron	-	-	TSL:3
Cpne2-205	ENSMUST00000156894.1	655	No protein	Retained intron	-	-	TSL:2

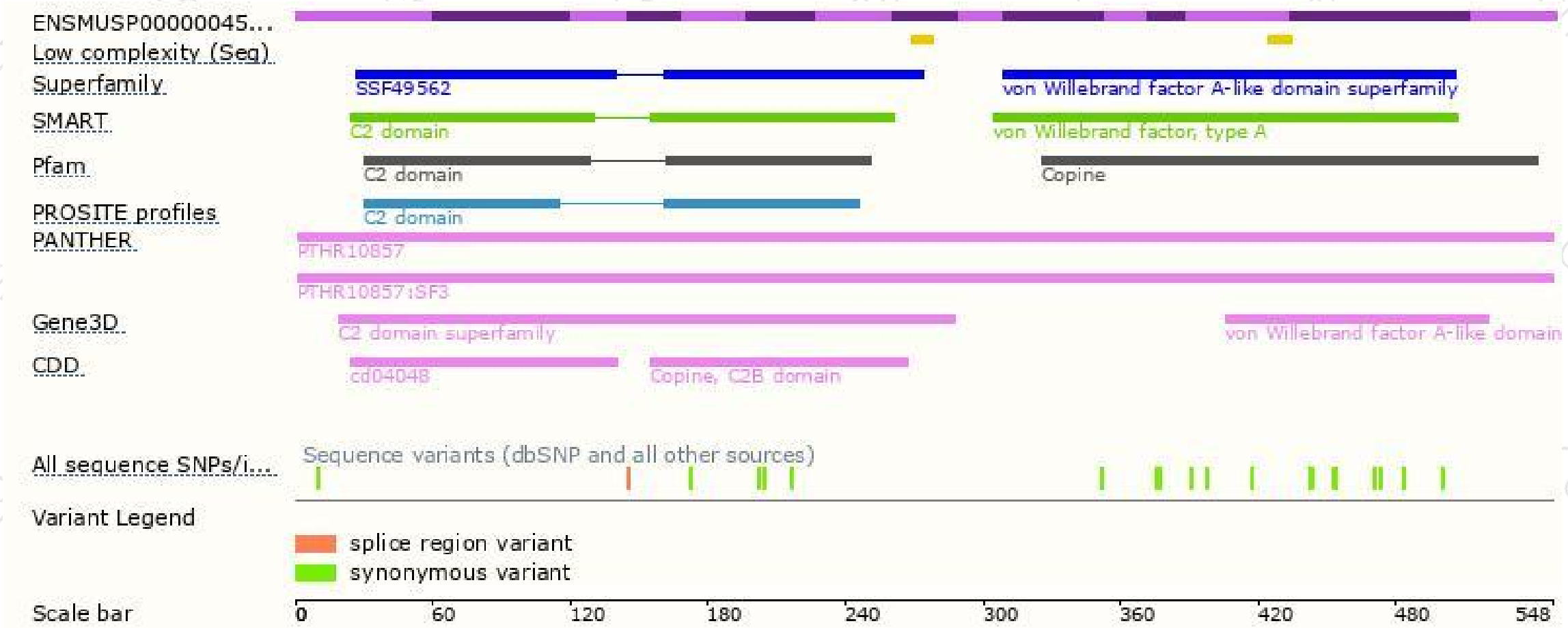
The strategy is based on the design of *Cpne2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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